THE Journal of the Kansas Medical Society

JUNE
1957

VOL LVIII
NO. 6

JUN 1 1957

STORMONT MEDICAL LIBRARY
TOPEKA, KANSAS

now...

to complete the Parke-Davis f

CELONTIN Kapseals (Methsuximide, Parke-Davis)
0.3 Gm., bottles of 100.
DILANTIN® Sodium (Diphenylhydantoin Sodium, Parke-Davis)
is supplied in a variety of forms—including
Kapseals of 0.03 Gm. and 0.1 Gm. in bottles of 100 and 1,000.
MILONTIN® Kapseals (Phensuximide, Parke-Davis)
0.5 Gm., bottles of 100 and 1,000.
MILONTIN Suspension, 250 mg. per 4 cc., 16-ounce bottles.
PHELANTIN® Kapseals (Dilantin 100 mg., phenobarbital
30 mg., desoxyephedrine hydrochloride 2.5 mg.), bottles of 100.

is

family of anticonvulsants

a new antiepileptic for petit mal and psychomotor seizures

CELONTIN*

(methsuximide, Parke-Davis)

Kapseals®

Clinical experience[1,2,3] with CELONTIN indicates that it:

- provides effective control with minimal side effects in the treatment of petit mal and psychomotor epilepsy;
- frequently checks seizures in patients refractory to other medications;
- has not been observed to increase incidence or severity of grand mal attacks in patients with combined petit and grand mal seizures.

Optimal dosage of CELONTIN should be determined by individual needs of each patient. A suggested dosage schedule is one 0.3 Gm. Kapseal daily for the first week. If required, dosage may be increased thereafter at weekly intervals, by one Kapseal per day for three weeks, to maximum total daily dosage of four Kapseals (1.2 Gm.).

1. Zimmerman, F. T., and Burgemeister, B.: *Arch. Neurol. & Psychiat.* **72**:720, 1954.
2. Zimmerman, F. T., and Burgemeister, B.: *J.A.M.A.* **157**:1194, 1955.
3. Zimmerman, F. T.: *Arch. Neurol. & Psychiat.* **76**:65, 1956.

*TRADEMARK

50105

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

THE JOURNAL
of the
KANSAS MEDICAL SOCIETY

Volume LVIII JUNE, 1957 Number 6

TABLE OF CONTENTS

Original Articles

Agranulocytosis—Report of Case following Use of Chlorpromazine—Samuel Zelman, M.D., Topeka 355

Medical Services—Distribution of Physicians and General Hospital Beds in Kansas in 1955—E. V. Thiehoff, M.D., Kansas City 357

Intoxication with Thiocyanate—Report of One Case and Review of the Literature—A. H. Greenhouse, M.D., Garden City . . . 365

Tracheo-Esophageal Fistula—Surgical Therapy for Nine Patients with Congenital Atresia of the Esophagus—John G. Shellito, M.D., Wichita 368

Tumor Conference—Neoplasia of the Lung in Women 377

Acute Pancreatitis—A Study of Its Etiology and a Review of the Literature—Robert E. Delphia, M.D., Kansas City 396

Editorials

The Year in Review 371
The Year to Come 372
Basic Science Act 374

Miscellaneous

President's Page 370
Just Browsing 376
Annual Meeting—Reports of Officers Elected for the Society, Specialty Groups, and Affiliated Organizations 382

Editorial Board

ORVILLE R. CLARK, M.D., *Editor,* Topeka
DAVID E. GRAY, M.D., Topeka
RICHARD GREER, M.D., Topeka
DWIGHT LAWSON, M.D., Topeka
JOHN A. SEGERSON, M.D., Topeka

Associate Editors

DONALD P. TREES, M.D., Wichita
VERNON E. WILSON, M.D., Kansas City

PAULINE FARRELL, Managing Editor and Advertising Manager

OLIVER E. EBEL, Business Manager
Executive Office: 315 West Fourth Street, Topeka

Ownership: The Journal is a non-profit publication owned and published monthly by the Kansas Medical Society.

Subscription: A year's subscription to the Journal is included in membership in the Kansas Medical Society, with $2.00 of each member's dues apportioned to the Journal. Rates to others, except in foreign countries, $4.00 per year or 60c per copy.

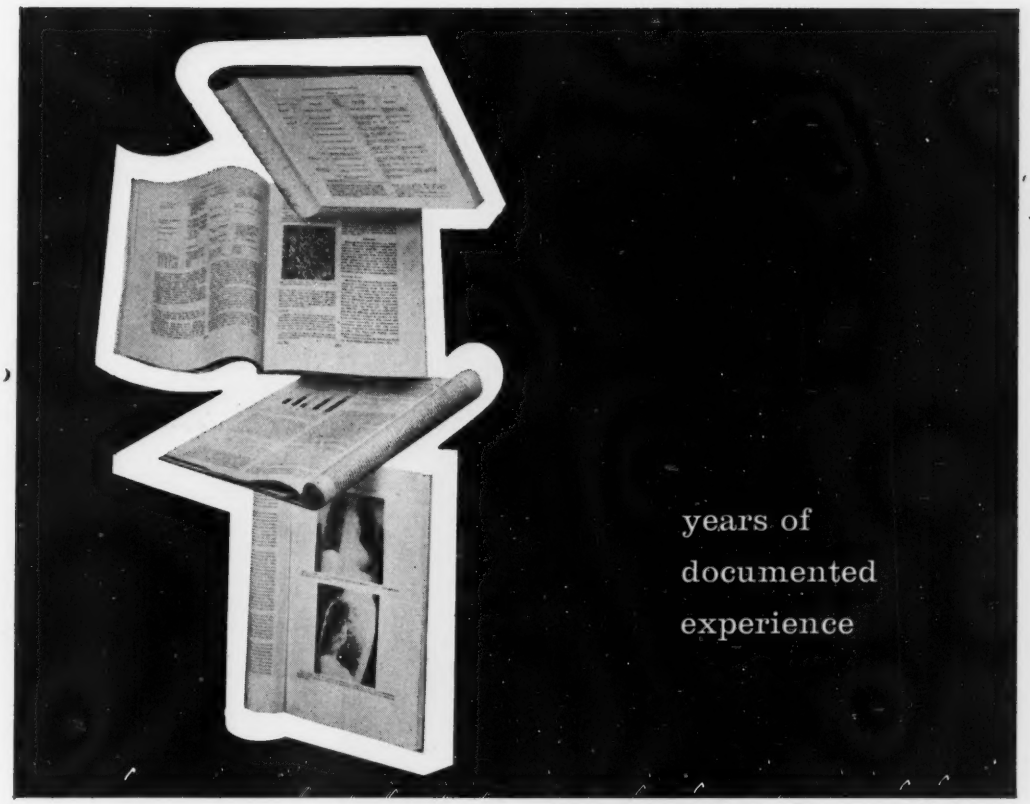
Material: Scientific articles, editorials, and data of general interest are invited from all members. Articles are to be submitted on condition that they are contributed solely to this publication. A right is reserved to reject any material deemed unsatisfactory.

Manuscripts: Only manuscripts that are typewritten on one side, double spaced, and original copies can be accepted. Manuscripts will be returned upon request.

Advertising: All advertising contracts, and all copy from advertisers under contract are subject to approval of the editorial board. Copy should be received by the 15th of the month immediately preceding the month of publication.

Non-Responsibility: Although an effort is made to publish only accurate articles and legitimate advertisements, the Journal denies legal responsibility for any statements, opinions, or advertisements appearing under the names of contributors or concerns.

Entered as second-class matter at the post office at Fulton, Missouri, June 19, 1953, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 2, 1918. Office of Publication: 1201-05 Bluff Street, Fulton, Missouri.



YOUR PATIENT NEEDS AN ORGANOMERCURIAL

Practicing physicians know that many years of clinical and laboratory experience with any medication are the only real test of its efficacy and safety.

Among available, effective diuretics, the organomercurials have behind them over three decades of successful clinical use. Their clinical background and thousands of reports in the literature testify to the value of the organomercurial diuretics.

TABLET

NEOHYDRIN

BRAND OF CHLORMERODRIN (18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

LAKESIDE

a standard for initial control of severe failure

MERCUHYDRIN® SODIUM

BRAND OF MERALLURIDE INJECTION

02196

WELL, SIR, LIKE I ALWAYS SAY: I'VE GOT A DEAL WITH THE DOCTOR. HE DOESN'T CUT HAIR, I DON'T PRACTICE MEDICINE.
JOE...KNOW ANY SURE CURE FOR THIS CHEST PAIN OF MINE?

THERE's some mighty shrewd wisdom in what Joe says. But human nature being what it is, far too many of us still seek medical advice from those who aren't qualified to give it.

No matter what's bothering you . . . constant fatigue, nerves on edge, recurring aches and pains . . . it is never wise to stay away from your doctor in the hope that you'll run into somebody who will know "just what's best" for your trouble. In fact, it's often dangerous to accept an amateur's "sure cure."

Seek a friend's advice, if you wish, on almost any other problem. But when it comes to your health, and that of your family, by all means don't let anyone other than a physician advise you.

By seeing your doctor at the first sign of trouble, you will not only avoid the hazards of amateur medical advice, but chances are you will save time and money in the long run. In fact, prompt and proper medical care may well turn out to be one of the biggest bargains ever to come your way

Copyright 1957—Parke, Davis & Company. Detroit 32, Michigan

PARKE, DAVIS & COMPANY

MAKERS OF MEDICINES SINCE 1866

Working with your physician, your pharmacist and your hospital to make modern medical care one of the most rewarding investments of your life.

"Joe, the barber" speaks up again . . .

You've met Joe before, doctor—in the 1956 Parke-Davis series of public service messages. And thanks to your warm reception of that advertisement last year . . . so enthusiastically expressed in your letters to us . . . we're featuring "Joe" again—this time in eye-catching color.*

You'll remember Joe's words of wisdom about seeking professional medical advice from the doctor rather than from the "amateur." His remark points up the fact that, by consulting *you* at the first sign of trouble, your patients will save time and money in the long run . . . perhaps even their lives.

Like all ads in the colorful P-D series, we believe this latest message will give your patients and prospective patients a better understanding of the importance of *prompt* and *proper* medical care.

PARKE, DAVIS & COMPANY
Detroit 32, Michigan

* This advertisement appears in the June 17th issue of Life: circulation more than 5½ million; total readership, over 15 million.

SAFETY FIRST

AFTER ALMOST FIVE YEARS OF INVESTIGATION AND EXTENSIVE CLINICAL USE (MILLIONS OF PRESCRIPTIONS) THERE HAS NOT BEEN A SINGLE REPORT OF A SERIOUS OR FATAL REACTION TO ERYTHROCIN

This remarkable safety record stands unparalleled in systemic antibiotic therapy today. In addition to being an unusually well-tolerated drug . . . ERYTHROCIN (compared to most other commonly-used antibiotics) is virtually free of side effects.

Still, with this virtual freedom from toxicity, ERYTHROCIN is effective in the great majority of common, bacterial respiratory infections. In speaking of pneumonia, Herrell said, *"the lack of toxic manifestations following administration of erythromycin today actually favors its use over that of the broad-spectrum antibiotics in the treatment of this infection."*[1]

While discussing purulent cellulitis and sepsis due to staphylococci, Eastman, et al., mentioned erythromycin as a *drug of first choice in treating these conditions.*[2]

Meanwhile, Solomon and Johnston stated, *"in the staphylococcic and streptococcic infections, other than pneumonias, without exception the results of treatment with erythromycin were excellent."*[3]

IN ANTIBIOTIC THERAPY

You, too, can have these same good results in your everyday practice—plus the assurance of prescribing a drug proved to be exceptionally well-tolerated in almost five years' use. *Filmtab* ERYTHROCIN Stearate (100 and 250 mg.), in bottles of 25 and 100.

FILMTAB®

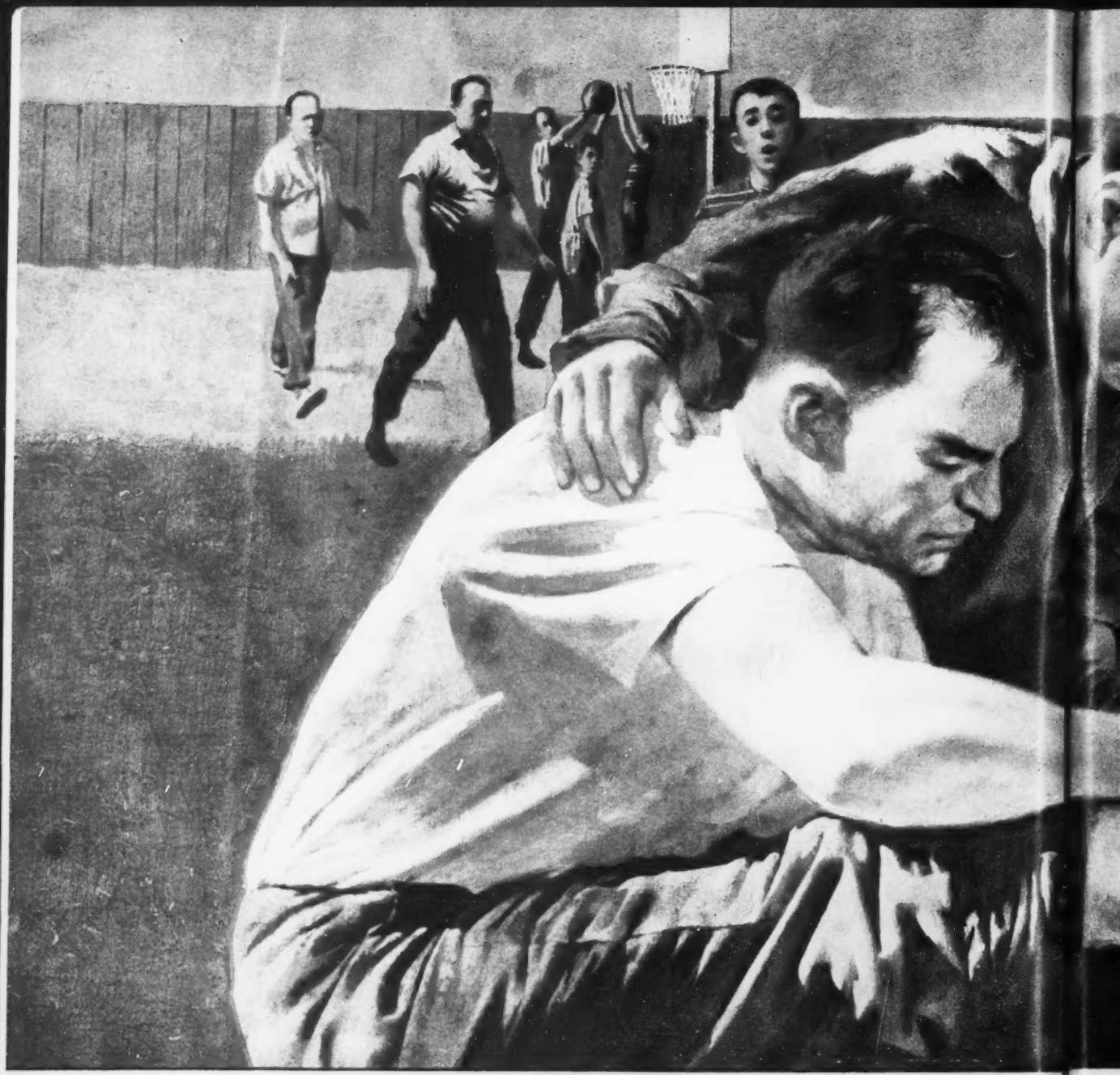
Erythrocin®

STEARATE (Erythromycin Stearate, Abbott)

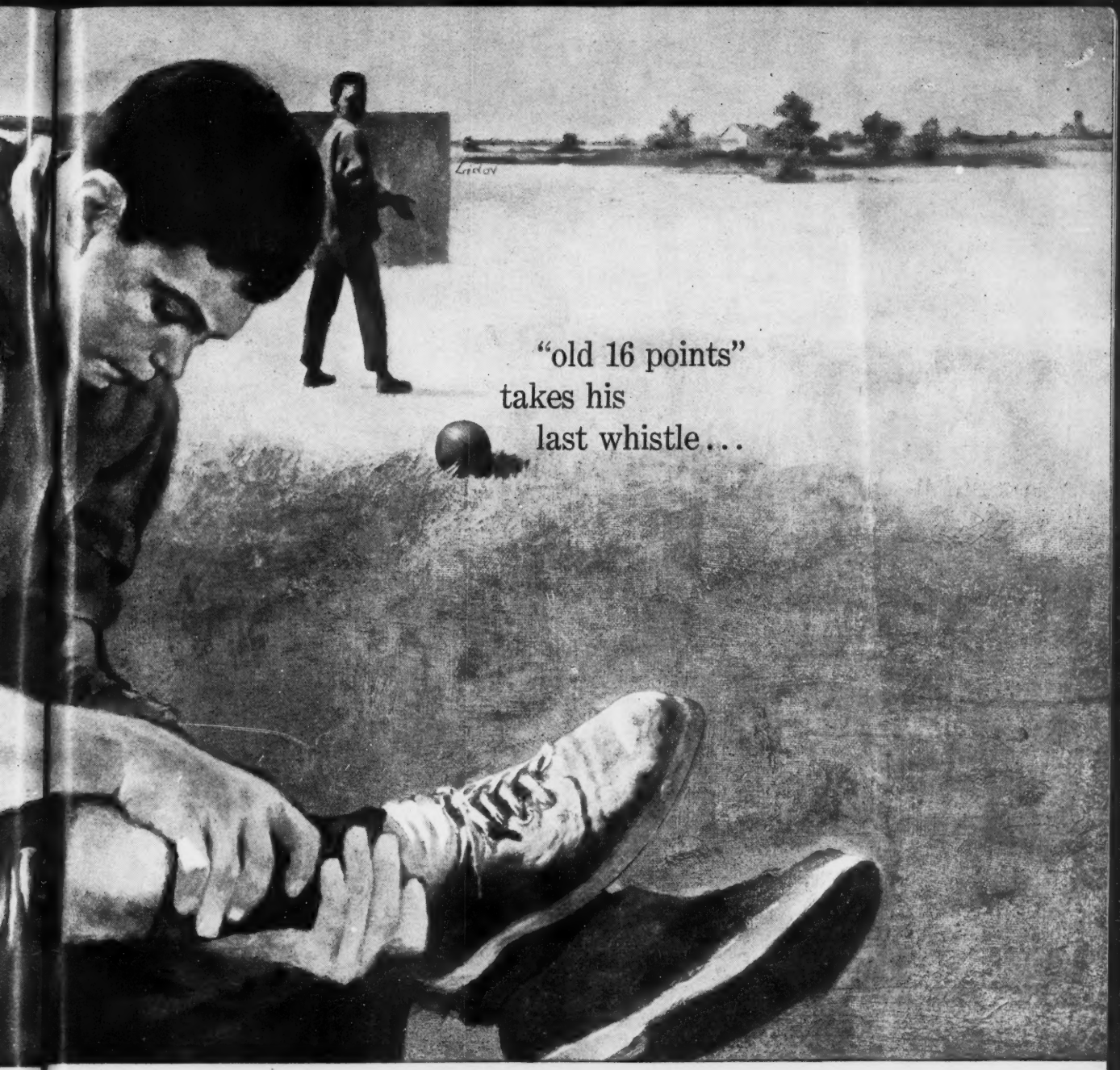
1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 34, New York, Medical Encyclopedia Inc., 1955. 2. Eastman, G., Cook, E. and Bunn, P., N. Y. State J. Med., 56:241, 1956. 3. Solomon, S. and Johnston, B., Amer. J. Med. Sc., 230:660, 1955.

Abbott

●Filmtab—Film-sealed tablets, Abbott; pat. applied for.



Traumatic periarticular fibrositis is a common penalty for those who go beyond their physical capacity. Early and adequate therapy with SIGMAGEN prevents the development of ligamentous calcification, periarthritis and its painful, sometimes irreversible, results. SIGMAGEN provides doubly protective corticoid-salicylate therapy – a combination of METICORTEN® (prednisone) and acetylsalicylic acid providing additive antirheumatic benefits as well as rapid analgesic effect. These benefits are supported by aluminum hydroxide to counteract excess gastric acidity and by ascorbic acid, the vitamin closely linked to adrenocortical function, to help meet the increased need for this vitamin during stress situations.



Therapy should be individualized. *Acute conditions:* 2 or 3 tablets 4 times daily. Following desired response, gradually reduce daily dosage and discontinue. *Subacute or chronic conditions:* Initially as above. After satisfactory control is obtained, gradually reduce the daily dosage to minimum effective maintenance level. For best results administer after meals and at bedtime.

Precautions: Because SIGMAGEN contains prednisone, the same precautions and contraindications observed with this steroid apply also to the use of SIGMAGEN. 66-J-457

for patients who go beyond their physical capacity...protective corticoid-salicylate therapy

SIGMAGEN

corticoid-analgesic compound tablets

Prednisone	0.75 mg.	Aluminum hydroxide	75 mg.
Acetylsalicylic acid	325 mg.	Ascorbic acid	20 mg.

Schering

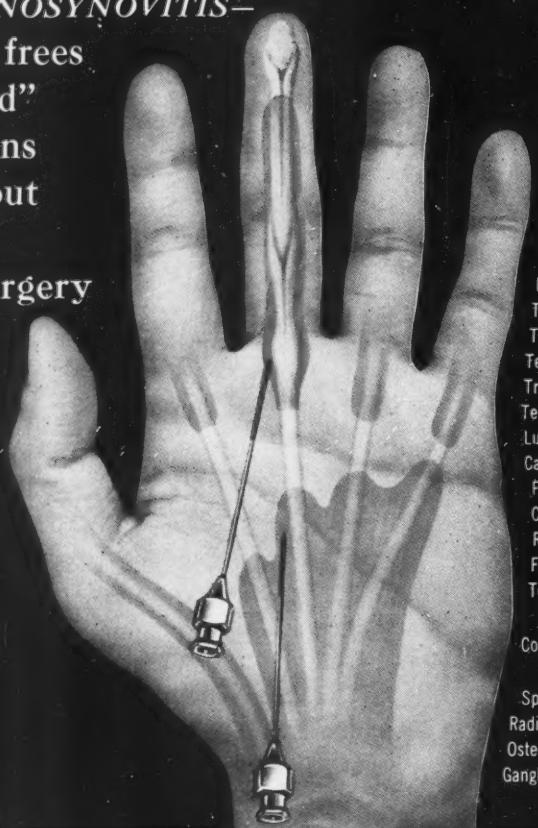
NEW

HYDELTRA® -T.B.A.

(Prednisolone *tertiary*-butylacetate, Merck)

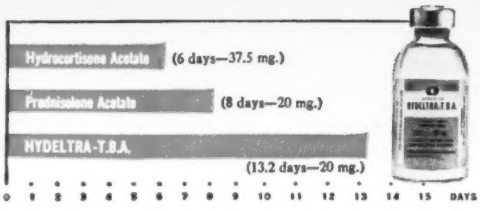
for relief that lasts—longer

in *TENOSYNOVITIS*—
often frees
"locked"
tendons
without
need
for surgery



Osteoarthritis
Rheumatoid arthritis
Acute gouty arthritis
Bursitis
Tendinitis
Trigger finger
Tenosynovitis
Trigger points
Tennis elbow
Lumbosacral strain
Capsulitis
Frozen shoulder
Coccydynia
Rheumatoid nodules
Fibrositis
Tensor fascia lata syndrome
Collateral ligament strains
Sprains
Radiculitis
Osteochondritis
Ganglia

Anti-inflammatory effect lasts longer than that provided by any other steroid ester


Hydrocortisone Acetate
(6 days—37.5 mg.)
Prednisolone Acetate
(8 days—20 mg.)
HYDELTRA-T.B.A.
(13.2 days—20 mg.)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 DAYS

Dosage: the usual intra-articular, intra-bursal or soft tissue dose ranges from 20 to 30 mg. depending on location and extent of pathology.

Supplied: Suspension 'HYDELTRA'-T.B.A.—20 mg./cc. of prednisolone *tertiary*-butylacetate, in 5-cc. vials.

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PA.

Now...control both
the G.I. disorder
and
its
"emotional
overlay"

Lederle

Now... control both

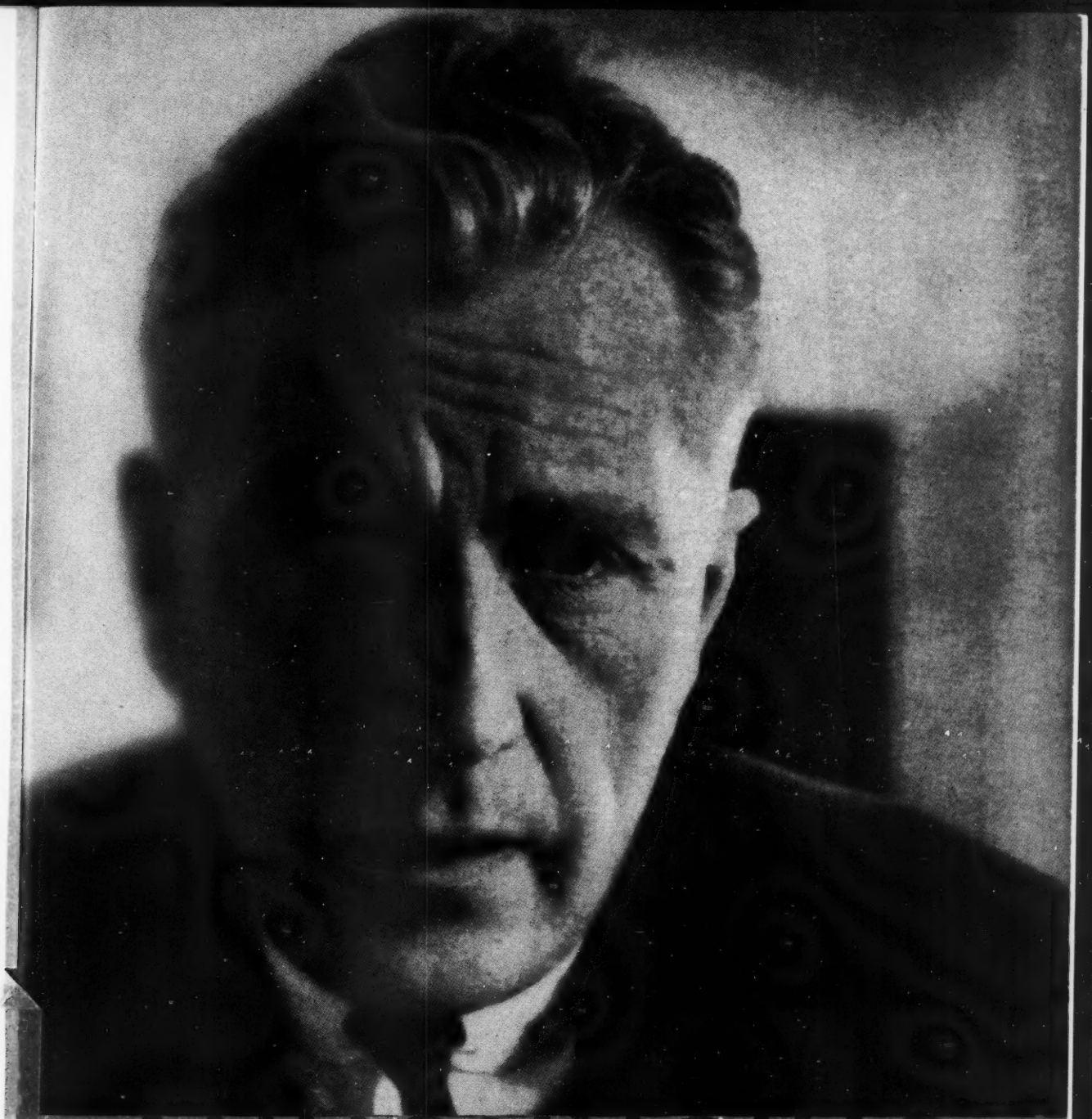
the G.I. disorder

and

its

"emotional

overlay"



ANNOUNCING PATHIBAMATE*

Meprobamate with PATHILON® LEDERLE

–for gastrointestinal tract disorders and their "emotional overlay"

*TRADENAME ®REGISTERED TRADENAME FOR TRIHEXETHYL IODIDE LEDERLE

combines **Meprobamate** *(400 mg.):*

Widely prescribed tranquilizer-muscle relaxant. Effectiveness in anxiety and tension states clinically demonstrated in millions of patients. Meprobamate acts only on the central nervous system. Does not increase gastric acid secretion. It has no known contraindications, can be used over long periods of time.[1,2,3]

with **Pathilon** *(25 mg.):*

An anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of G.I. tract disorders. In a comparative evaluation of currently employed anticholinergic drugs, PATHILON ranked high in clinical results, with few side effects, minimal complications, and few recurrences.[4]

Now...with **PATHIBAMATE**...*you can control disorders of the digestive tract and the "emotional overlay" so often associated with their origin and perpetuation...without fear of barbiturate loginess, hangover or addiction. Among the conditions which have shown dramatic response to* **PATHIBAMATE** *therapy:*

DUODENAL ULCER • GASTRIC ULCER • INTESTINAL COLIC
SPASTIC AND IRRITABLE COLON • ILEITIS • ESOPHAGEAL SPASM
ANXIETY NEUROSIS WITH G.I. SYMPTOMS • GASTRIC HYPERMOTILITY

Comments on PATHIBAMATE *from clinical investigators*

- "I find it easy to keep patients using the drug continuously and faithfully. I feel sure this is due to the desirable effect of the tranquilizing drug."[5]

- "The results in several people who were previously on belladonna-phenobarbital preparations are particularly interesting. Several people volunteered that they felt a great deal better on the present medication and noted less of the loginess associated with barbiturate administration."[6]

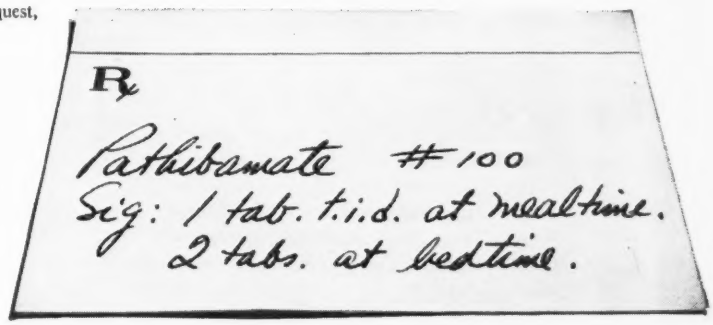
- PATHIBAMATE..."will favorably influence a majority of subjects suffering from various forms of gastrointestinal neurosis in which spasmodic manifestations and nervous tension are major clinical symptoms."[7]

- "In the patients with functional disturbances of the colon with a high emotional overlay, this has been to date a most effective drug."[5]

References: 1. Borrus, J. C.: *M. Clin. North America,* In press, 1957. 2. Gillette, H. E.: *Internat. Rec. Med. & G. P. Clin.* 169:453, 1956. 3. Pennington, V. M.: *J.A.M.A.,* In press, 1957. 4. Cayer, D.: Prolonged Anticholinergic Therapy of Duodenal Ulcer. Am. J. Dig. Dis. 1:301-309 (July) 1956. 5. McGlone, F. B.: Personal Communication to Lederle Laboratories. 6. Texter, E. C., Jr.: Personal Communication to Lederle Laboratories. 7. Bauer, H. G. and McGavack, T. H.: Personal Communication to Lederle Laboratories.

Supplied: Bottles of 100 and 1000

Administration and Dosage: 1 tablet three times a day at mealtimes and 2 tablets at bedtime. Full information on PATHIBAMATE available on request, or see your local Lederle representative.



Lederle LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

Rauwiloid®

A Better Antihypertensive

"We prefer to use alseroxylon (Rauwiloid)

since it is less likely to produce excessive fatigue and weakness than does reserpine."[1] Up to 80% of patients with mild labile hypertension and many with more severe forms are controlled with Rauwiloid alone.

1. Moyer, J.H.: J. Louisiana M. Soc. *108*:231 (July) 1956.

A Better Tranquilizer, too

"...relief from anxiety resulted in generally increased intellectual and psychomotor efficiency with a few exceptions."[2] Rauwiloid is outstanding for its *nonsoporific* sedative action in a long list of unrelated diseases not necessarily associated with hypertension but burdened by psychic overlay.

2. Wright, W.T., Jr., et al.: J. Kansas M. Soc. *57*:410 (July) 1956.

Dosage: Merely two 2 mg. tablets at bedtime. After full effect one tablet suffices.

Best first step when more potent drugs are needed

Rauwiloid is recognized as basal medication in all grades and types of hypertension. In combination with more potent agents it proves synergistic or potentiating, making smaller dosage effective and freer from side actions.

Rauwiloid® + Veriloid®

In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid and 3 mg. Veriloid. Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid® + Hexamethonium

In severe, otherwise intractable hypertension this single-tablet combination provides smoother, less erratic response to hexamethonium. Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate. Initial dose, ½ tablet q.i.d.

Riker LOS ANGELES

My patients complain that the pain tablets I prescribe are too slow-acting... they usually take about 30 to 40 minutes to work.

Why don't you try the new codeine derivative that's combined with APC for faster, longer-lasting pain relief?

CLINICAL COLLOQUY

What is it... how fast does it act?

It's Percodan*—relieves pain in 5 to 15 minutes, with a single dose lasting 6 hours or longer.

How about side effects?

No problem. For example, the incidence of constipation with Percodan* is rare.

Sounds worth trying— what's the average adult dose?

One tablet every 6 hours. That's all.

Where can I get literature on Percodan?

Just ask your Endo detailman or write to:

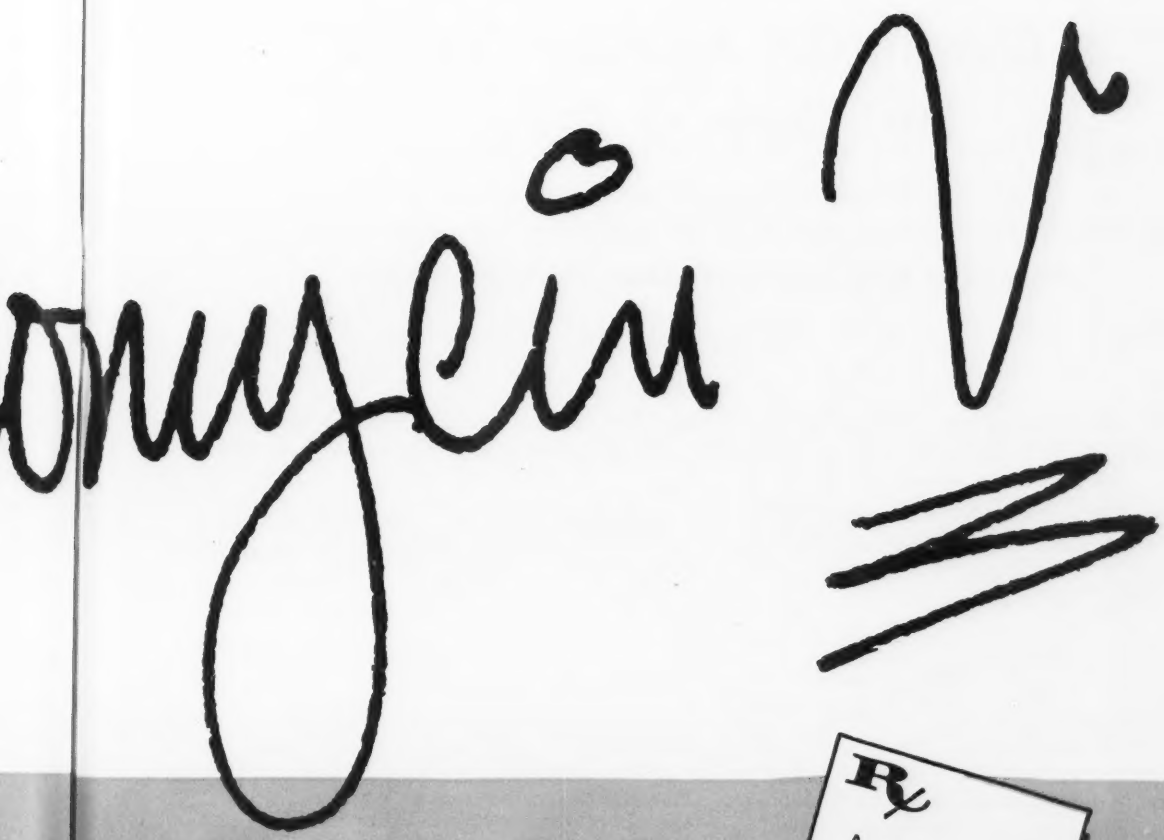
Endo®

ENDO LABORATORIES

Richmond Hill 18, New York

*U. S. Pat. 2,628,185. PERCODAN contains salts of dihydrohydroxycodeinone and homatropine, plus APC. May be habit-forming. Available through all pharmacies.

V stands for— • **greater antibiotic absorption** • **earlier therapeutic blood levels** • **faster broad-spectrum action.** ACHROMYCIN V Capsules are the new, rapid-acting, oral form of ACHROMYCIN* Tetracycline—offering your patients, on the average, twice the antibiotic absorption in half the time required by older preparations.



REMEMBER THE V WHEN SPECIFYING

ACHROMYCIN® V Tetracycline Buffered with Phosphate

CAPSULES—Each capsule (pink) contains tetracycline equivalent to 250 mg. of tetracycline HCl, phosphate-buffered. Bottles of 16 and 100 capsules.

SYRUP—Each teaspoonful (5 cc.) of orange-flavored syrup contains 125 mg. of tetracycline HCl activity, phosphate-buffered. Bottles of 2 and 16 fl. oz.

ACHROMYCIN V dosage: 6-7 mg. per lb. of body weight per day for children and adults.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, N. Y.

Lederle

®Reg. U. S. Pat. Off.

Steroid-Nutritional Therapy Is Constructive Approach for the First Signs of Aging

Emphasis on Early Treatment Before "Damage" Is Done

The first subtle suggestions of physiologic deterioration should not be dismissed if serious somatic and metabolic disorders are to be avoided. Prompt institution of steroid-nutritional therapy may forestall and even reverse premature "damage" and help prolong the active life of the patient.

Some of the most common symptoms of declining gonadal function and nutritional insufficiency are vague pains in the bones and joints, easy fatigability, decreased muscular tone, loss of appetite, chronic mental fatigue and general malaise. In older patients, these complaints are frequently indicative of degenerative processes when they cannot be attributed to a specific cause.

The comprehensive formula of "Mediatric" is specifically designed to provide three therapeutic services: 1. *protect* general metabolic integrity; 2. *preserve* physiologic efficiency; 3. *prevent* premature damage.

"Mediatric" supplies estrogen and androgen in small amounts to exert a favorable influence on bone and protein metabolism,[1] restore muscle tone and coordination,[2] and increase the tensile strength of the skin.[3] The two steroids appear to have an additive metabolic effect, while their opposing action on sex-linked tissue minimizes the incidence of untoward reactions.

Dietary supplements, including essential B vitamins and ascorbic acid, ensure adequate nutrition, prevent moderate anemias, and maintain efficient enzyme systems. The mood elevating effect of a mild antidepressant helps restore emotional stability and increases mental alertness.

Recommended dosages: Male—1 tablet or 1 capsule (or 3 teaspoonfuls) daily, or as required. Female—1 tablet or 1 capsule (or 3 teaspoonfuls) daily, or as required, taken in 21 day courses with a rest period of one week between courses.

Bibliography on request.

"MEDIATRIC"® Tablets and Capsules

Each capsule or tablet contains:

Conjugated estrogens equine ("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Vitamin C (ascorbic acid)	50.0 mg.
Thiamine mononitrate (B_1)	5.0 mg.
Vitamin B_{12} with intrinsic factor concentrate	1/6 U.S.P. Unit
Folic acid U.S.P.	0.33 mg.
Ferrous sulfate exsic.	60.0 mg.
Brewers' yeast (specially processed)	200.0 mg.
d-Desoxyephedrine HCl	1.0 mg.

Tablets—No. 752—bottles of 100 and 1,000.
Capsules—No. 252—bottles of 30, 100, and 1,000.

"MEDIATRIC" Liquid

Each 15 cc. (3 teaspoonfuls) contains:

Conjugated estrogens equine ("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Thiamine HCl (B_1)	5.0 mg.
Vitamin B_{12}	1.5 mcg.
Folic acid U.S.P.	0.33 mg.
d-Desoxyephedrine HCl	1.0 mg.

Contains 15% alcohol

No. 910—bottles of 16 fluidounces and 1 gallon.

AYERST LABORATORIES
New York, N. Y. • Montreal, Canada

5711

"MEDIATRIC" *will promote better health and vigor when the patient complains of . . . easy fatigability . . . vague pains in the bones and joints*

These symptoms may be the first signs of degenerative changes in patients over 40. "Mediatric" supplies small doses of estrogen and androgen, important dietary supplements and a mild antidepressant to forestall or even correct the "damage" of premature aging.

"Mediatric"®– steroid-nutritional compound, available in tablets, capsules and liquid.

Ayerst Laboratories • New York, N. Y. • Montreal, Canada

5708

PREVENT P.P.B.E.

Postpartum breast engorgement was satisfactorily prevented in 96 per cent of a series of 267 patients who received "Premarin" with Methyltestosterone promptly after delivery. No serious side effects were noted, and the absence of mental depression in the puerperium was notable. (Fiskio, P.W.: GP 11:70 (May) 1955.)

"PREMARIN" WITH METHYLTESTOSTERONE
for combined estrogen-androgen therapy

Ayerst

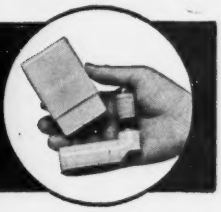
Ayerst Laboratories • New York, N. Y. • Montreal, Canada

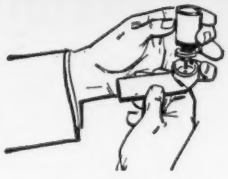
5737

MILLIONS OF ASTHMATIC ATTACKS

have been aborted faster...more effectively... more economically with

Medihaler®





SIMPLE TO USE

CONVENIENT

SUITABLE FOR CHILDREN, TOO

SLIPS INTO POCKET OR PURSE

Automatically measured dosage and true nebulization...nothing to pour or measure...One inhalation usually gives prompt relief of acute or recurring asthmatic attacks.

Medihaler-Epi replaces injected epinephrine in urticaria, edema of glottis, etc. due to acute food, drug or pollen reactions...Each 10 cc. bottle delivers 200 inhalations.

IN ASTHMA PRESCRIBE EITHER

Medihaler-EPI® Riker brand epinephrine U.S.P. 0.5% solution in inert, nontoxic aerosol vehicle. Each measured dose 0.12 mg. epinephrine. In 10 cc. bottle with measured-dose valve.

Medihaler-ISO® Riker brand isoproterenol HCl 0.25% solution in inert, nontoxic aerosol vehicle. Each measured dose 0.06 mg. isoproterenol. In 10 cc. bottle with measured-dose valve.

Note: First prescription for Medihaler medications should include the desired medication and Medihaler Oral Adapter (supplied with pocket-sized plastic carrying case for medication and Adapter).

The Medihaler Principle

is also available in Medihaler-Nitro™ (octyl nitrite) for the rapid relief of angina pectoris ...and Medihaler-Phen™ (phenylephrine-hydrocortisone-neomycin) for lasting, effective relief of nasal congestion.

Riker LOS ANGELES

CORN OIL LOWERS

serum cholesterol

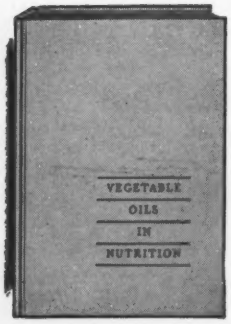
Physicians are well aware of recent reports that blood cholesterol levels tend to decrease significantly in humans when a substantial part of the dietary fat is supplied as polyunsaturated vegetable oil. Many clinical and experimental studies have shown Mazola Corn Oil to be particularly effective as a cholesterol-reducing agent.

In the dietary management of blood cholesterol levels it is practical to decrease the total daily intake of fat and substitute Mazola Corn Oil for a substantial amount of the saturated fat. Corn oil can be included in the daily diet as salad dressings and in a variety of other ways* without the usual inconveniences of dieting. Mazola Corn Oil is a product everyone knows, respects, enjoys and keeps on hand.

MAZOLA® CORN OIL IS DERIVED 100% FROM CORN

- It is in its natural form— *not hydrogenated*
- It contains no cholesterol
- Over 85% of its component fatty acids are unsaturated
- It is rich in the metabolically specially important linoleic acid
- It is an excellent carrier for fat soluble vitamins
- It is well tolerated, readily digested and easily absorbed
- It is suitable for inclusion in the daily diet in a wide variety of ways*

**A collection of recipes using Mazola Corn Oil is available on request.*



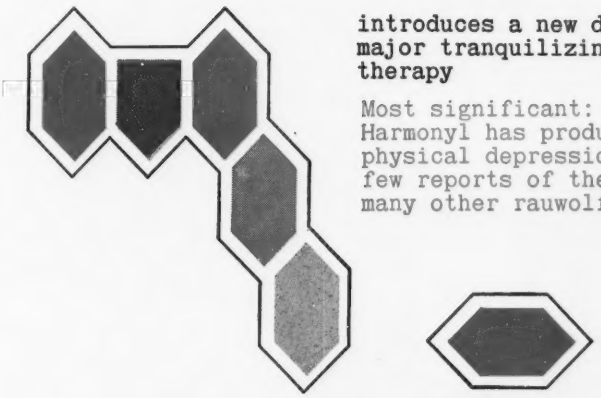
Do you have "Vegetable Oils in Nutrition?" If not, you may have this 88-page reference and monograph without charge. Write to Medical Department, Corn Products Refining Company, 17 Battery Place, New York 4, N. Y.

CORN PRODUCTS REFINING COMPANY

unique derivative of *Rauwolfia canescens*

Harmonyl*

(Deserpidine, Abbott)



introduces a new degree of safety in major tranquilizing—antihypertensive therapy

Most significant: In extensive trials, Harmonyl has produced less mental and physical depression. And there are very few reports of the lethargy seen with many other rauwolfia preparations.

More than two years of clinical evaluation have proven Harmonyl a notably safe and effective agent in cases ranging from mild anxiety to major mental illnesses and in hypertension. Harmonyl exhibited significantly fewer and milder side effects in comparative studies with reserpine—while demonstrating effectiveness comparable to the most potent forms of rauwolfia.

Safety—plus marked clinical effectiveness

Harmonyl proved particularly effective, for example, in tranquilizing a group of 40 chronically ill, agitated senile patients.[1]

Of particular interest is the observation that patients became more lucid and alert on Harmonyl therapy. And there was a complete absence of side effects with Harmonyl—although a similar group on reserpine developed such side effects as anorexia, headache, bizarre dreams, shakes, nausea and vomiting.

Following another eight-month study of chronic, hospitalized mental patients, Ferguson[2] stated:

- Harmonyl benefited at least 15% more overactive patients and proved more potent in controlling aggression—requiring only one-half to two-thirds the dosage of reserpine.
- Patients experiencing side reactions on reserpine often were completely relieved when changed to Harmonyl.

Ferguson concluded: "*The most notable impressions were the absence of side effects and relatively rapid onset of action with Harmonyl.*"

Comparative studies have shown Harmonyl and reserpine about equal in hypotensive effect. The tranquilizing action of the two drugs also appeared similar—except that few cases of giddiness, vertigo, sense of detached existence or disturbed sleep were seen with Harmonyl.

Professional literature is available upon request. Harmonyl is supplied in 0.1-mg., 0.25-mg., and 1-mg. tablets. Abbott

References: 1. Communication to Abbott Laboratories, 1956. 2. Ferguson, J. T.: Comparison of Reserpine and Harmonyl in Psychiatric Patients: A Preliminary Report, Journal Lancet, 76:389, December, 1956. *Trademark

706185

kids really like...

RUBRATON

SQUIBB IRON, B COMPLEX AND B_{12} VITAMINS ELIXIR

- to correct many common anemias
- to correct mild B complex deficiency states
- to aid in promotion of growth and stimulation of appetite in poorly nourished children

Each teaspoonful (5 cc.) supplies:

Elemental Iron	38 mg.
(as ferric ammonium citrate and colloidal iron)	
(equivalent to 130 mg. ferrous sulfate exsiccated)	
Vitamin B_{12} activity concentrate	4 mcg.
Thiamine mononitrate	1.0 mg.
Riboflavin	1.0 mg.
Niacinamide	5 mg.
Pantothenic acid (Panthenol)	1.5 mg.
Pyridoxine hydrochloride	0.5 mg.

Alcohol content: 12 per cent

Dosage: 1 or 2 teaspoonfuls t.i.d.

Supply: Bottles of 8 ounces and 1 pint.

SQUIBB

Squibb Quality—
the Priceless Ingredient

"RUBRATON"® IS A SQUIBB TRADEMARK

in allergic eczemas

Meti-Derm CREAM 0.5%

water washable—stainless

(METICORTELONE, free alcohol)

Meti-Derm OINTMENT 0.5%

with Neomycin

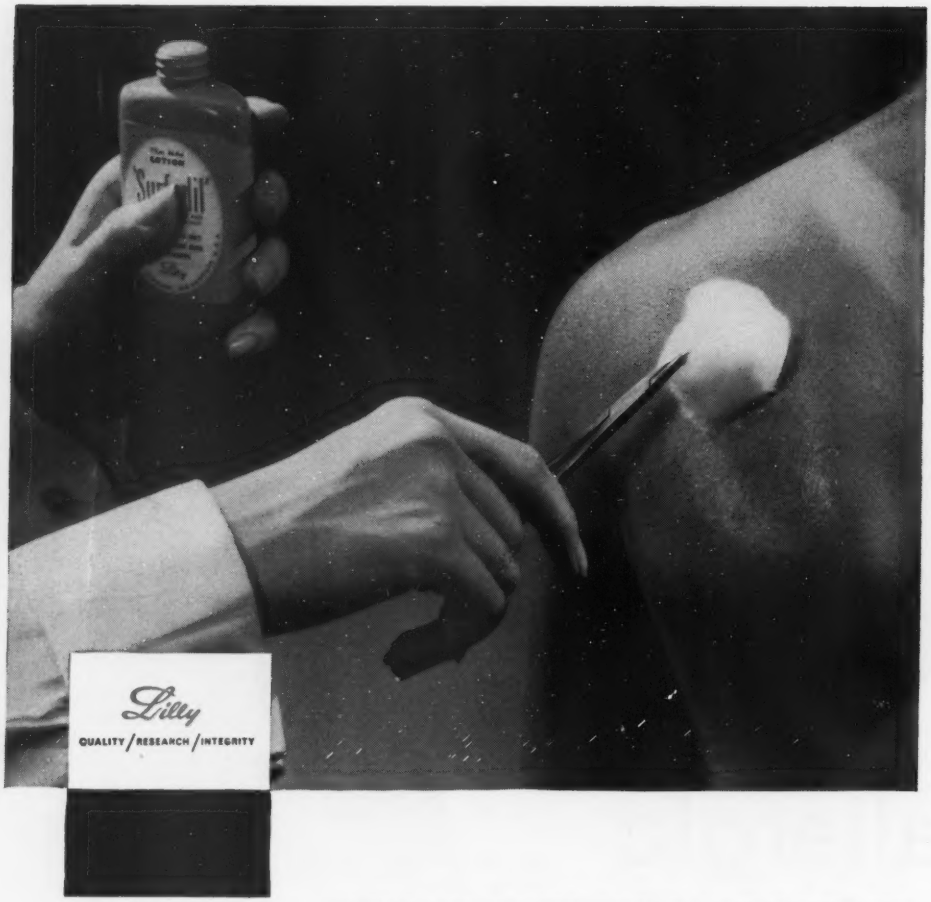
5 mg. METICORTELONE and 5 mg. Neomycin Sulfate for comprehensive topical therapy

each in 10 Gm. tubes

Schering

MD-J-117

METI-DERM,* brand of prednisolone topical.
METICORTELONE,® brand of prednisolone.
*T.M.



Abates pain and itch, protects against sun's rays

LOTION

SURFADIL

(Cyclomethycaine and Thenylpyramine, Lilly)

Formulated to insure patient acceptance

Lotion 'Surfadil' combines the highly effective topical anesthetic, 'Surfacaine' (Cyclomethycaine, Lilly); an antihistamine, 'Histadyl' (Thenylpyramine, Lilly); and the protective adsorbent, titanium dioxide. It provides prompt and prolonged relief from contact dermatitis caused by poison ivy, oak, or sumac. It is also valuable for eczema, insect bites, heat rash, and sunburn.

Lotion 'Surfadil' is skin tone in color and virtually odorless; does not readily rub off but washes off easily.

Lotion 'Surfadil' is available in an attractive plastic container (75 cc.) at retail pharmacies everywhere. Also supplied in 1-pint bottles and as a cream in 1-ounce tubes and 1 and 5-pound jars.

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

761007

The JOURNAL *of the*
KANSAS MEDICAL SOCIETY

Copyright, 1957, by the Kansas Medical Society

Volume LVIII **JUNE, 1957** **No. 6**

Agranulocytosis

Report of Case following Use of Chlorpromazine

SAMUEL ZELMAN, M.D., ***Topeka***

A 62-year-old white female psychiatric patient was given chlorpromazine in gradually increasing dosage from July 12 to August 21, 1956, the total amount given being 8.9 grams. On the latter date, her complaint of a sore throat sufficiently severe to interfere with swallowing resulted in a medical consultation and a leukocyte count. Her total leukocyte count was 485 per cu. mm., of which only 3 per cent were granulocytes.

Her history indicated a sore throat of ten days' duration, becoming increasingly severe and associated with dryness of the nose and throat, congested turbinates, and difficulty in breathing and swallowing, but no cough or dyspnea.

When examined, she did not appear seriously ill, but moved her jaws with discomfort. There were tender lymph nodes beneath both sides of the mandible. The pharynx appeared swollen, reddened, and dry, but not purulent, and it was not ulcerated. The nasal mucosa bore a similar appearance and was congested, filling the nares bilaterally. The conjunctivae were pale, the chest and abdomen not remarkable.

Culture of a throat swab grew alpha hemolytic streptococci and nonhemolytic staphylococci, both in abundance. Culture of the blood yielded no growth. A smear of the sternal marrow revealed moderate hypoplasia, with apparently adequate erythroblasts, and megakaryocytes in abundance; myeloblasts, promyelocytes, and myelocytes were present, but no granulocytes of greater maturity; many plasma cells were present. In the peripheral blood a normal thrombocyte count was obtained, and a moderate drop in hemoglobin and in erythrocytes was noted, as compared with a count recorded one month earlier.

No previous temperature record was available. For the first three days a remittent fever obtained, reaching no higher than 100.5 degrees Fahrenheit. Therapy consisted of parenteral procaine penicillin 600,000 units and streptomycin 0.5 Gm. (alternating with dihydrostreptomycin) every 12 hours. Symptomatic therapy included anesthetic lozenges and decongestive nasal medication, analgesics, and sedation. A single pint of blood was transfused.

On the second day the patient's total leukocyte count dropped to 177 per cu. mm., and two days later all granulocytes disappeared from the peripheral blood.

After the initial three febrile days, there followed five afebrile days, during which the patient improved symptomatically, swallowing easily. The pharyngeal edema subsided though redness persisted. The cervical lymph nodes became smaller and less tender. But a new and tender lymph node appeared in the right groin on the fourth day, followed by a suggestively spreading cellulitis of that region. An occasional blast cell was found in the peripheral blood during the sixth to ninth days of observation.

On the eighth day, soreness and redness of the mouth and gums appeared. Fever of 100 degrees Fahrenheit was present throughout the ninth day. Culture of a throat swab again grew alpha hemolytic streptococci and hemolytic staphylococci, both in great numbers. By this time the total leukocyte count had risen to 600 per cu. mm., all mononuclear cells.

On the ninth day oral novobiocin was added to the therapy, 0.25 Gm. every 6 hours. Two days later fear of monilial infection of the mouth, not later substantiated by culture, led to the addition of Mycostatin to the other therapies.

Assistant Chief, Medical Service, Winter Veterans Administration Hospital, Topeka; Lecturer in Medicine, University of Kansas Medical School.

The patient was again afebrile during the 10th and 11th days, but the following two days were again characterized by remittent fever to 100.8 degrees Fahrenheit and recurrence of soreness of the mouth and throat, interfering with food intake. On the 12th day of observation, therefore, sulfamerazine was added (4.0 Gm. initially, followed by 1.0 Gm. every 6 hours), and 20 cc. of the patient's blood was injected intramuscularly.

The patient proved afebrile thereafter and improved steadily symptomatically. The leukocyte count reached 1000 per cu. mm. on the 13th day, all cells being mononuclear. A few immature granulocytes appeared the next day. The granulocyte count rose rapidly and progressively thereafter, consisting at first of predominantly immature forms. Normal total counts were reached by the 19th day, but immature forms persisted until the 29th day. Sternal marrow aspiration on the 22d day yielded numerous thick flakes of marrow, which on microscopic examination showed marked granulocytic hyperplasia with predominantly mature forms. Peripheral leukocytosis did not occur. Penicillin, streptomycin, and Mycostatin were discontinued on the 16th day, sulfamerazine two days later, and novobiocin on the 22d day. On the 29th day the patient was returned to the Psychiatric Service, with warning against any future use of chlorpromazine and emphasis on the imperative need of immediate leukocyte count in the event of recurrence of sore mouth or throat of any cause.

Comment

Agranulocytosis in this case cannot be attributed with certainty to hypersensitivity to chlorpromazine, inasmuch as the patient had received additional drugs, some of which (pyribenzamine, phenobarbital, pentobarbital, acetphenetidin) have been implicated as agranulocytic agents. The timing of onset favors chlorpromazine as the responsible drug.

Agranulocytosis is most frequent in women past middle age. Despite the preponderance of male patients at Winter Veterans Administration Hospital, this woman is the first patient in whom agranulocytosis has been encountered following chlorpromazine therapy. The syndrome is independent of dosage and usually develops after 4 to 8 weeks of treatment, though previous administration may hasten the onset and later onset is always possible. Following recovery, established sensitivity has been demonstrated repeatedly, indicated by complete disappearance of granulocytes from the peripheral blood within 6 to 10 hours of administration of a small dose; the hazard of this test does not warrant its clinical use.

A leukocyte-agglutinating plasma globulin[1] presumably brings about destruction of the agglutinated leukocytes. Bone marrow exhaustion follows. The globulin is presumably a leukocytotropic antibody formed in response to antigen consisting of drug combined with a plasma protein.[2]

With removal of the offending drug, the syndrome is self-limited. Recovery is assured by antibiotic therapy designed to protect the patient until the normal granulocytic barrier against infection is restored. Those regions normally harboring bacteria (the throat and perineum) are most susceptible to spreading infection when the granulocytic defense is withdrawn.

Adrenocortical therapy is now frequently employed in the hope of hastening recovery of the bone marrow and of inhibiting the antigen-antibody reaction which precipitates agranulocytosis. It has not yet been shown to speed recovery, but the disease is so infrequent as to make judgment difficult. Such therapy increases the hazard of spread of infection, for which reason it was not employed in this case. Since deaths are invariably due to infection, this is an important point, and it should be resolved by studies involving treatment of alternate cases at medical centers large enough to encounter a sufficient number.

Winter Veterans Administration Hospital
Topeka, Kansas

Bibliography

1. Moeschlin, S., and Wagner, K.: Agranulocytosis due to the occurrence of leukocyte-agglutinins, Acta Hemat. 8:29-41 (July-Aug.) 1952.

2. Dameshek, W., and Colmes, A.: The effect of drugs in the production of agranulocytosis with particular reference to amidopyrine sensitivity, J. Clin. Invest. 15:85-97, 1936.

The function of play is to balance life in relation to work, to afford a refreshing contrast to responsibility and routine, to keep alive that spirit of adventure and that sense of proportion which prevents taking oneself and one's job too seriously, and thus to avert the premature death of youth, and not infrequently the premature death of man himself.

—*Austin Fox Riggs*

Medical Services

Distribution of Physicians and General Hospital Beds in Kansas in 1955

E. V. THIEHOFF, M.D., ***Kansas City***

The availability of facilities for the practice of medicine is an important factor in the distribution of physicians and their services. So as an indication of these facilities in Kansas it was decided to include in this study a survey of the distribution of general hospital beds in relation to the distribution of physicians.

The Division of Hospital Facilities of the Kansas State Board of Health provided information relative to the distribution of general hospital beds. This data was obtained from Hospital Construction Plan, Kansas State Board of Health, Hospital Facilities Division, July 1, 1955.

Kansas Hospital Facilities

The Kansas Hospital Survey and Construction Act became a law in April, 1947. Under this act the Division of Hospital Facilities of the State Board of Health was established, and the Kansas Advisory Hospital Council was appointed by the governor.

The Licensing Act became law June 30, 1947. This law designates the Kansas State Board of Health as the agency to adopt standards and regulations and to administer the licensing program. The Division of Hospital Facilities and the Kansas Advisory Hospital Council perform this function.

Hospital Regions

The state has been divided into seven hospital regions, namely: 1. Kansas City, 2. Pittsburg, 3. Topeka, 4. Salina, 5. Wichita, 6. Hays, and 7. Dodge City. See Figure 1.

The author is chairman of the Department of Public Health and Preventive Medicine, University of Kansas Medical Center.

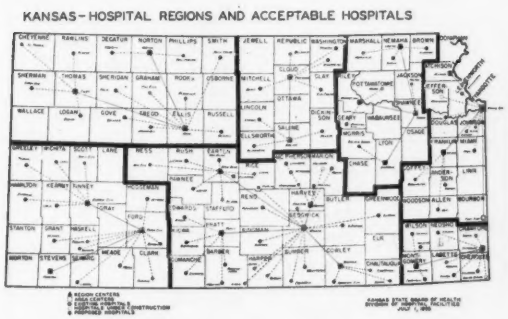


Figure 1.

Each region is designated by the name of the city where the regional center is located. The regions and their respective centers were determined on the basis of existing trade, transportation, and communication patterns. The referral of patients, hospital relationships, and patient preferences generally follow these patterns.

This is the concluding installment of a three-part series which began in the Journal in April and was continued in May.

Hospital Areas

The seven hospital regions are further sub-divided into 23 general hospital service areas, with a center assigned to each area. See Figure 2. These areas are designated by the letters B, I, or R, depending upon whether they are considered as Base, Intermediate, or Rural Areas.

Note: Since the map in Figure 2 was issued the hospitals at Winchester and Attica have been completed.

Ratio of Hospital Beds to Population

Kansas has over 12.0 people per square mile, and therefore regulations under Public Law 725 permit an over-all state ratio of 4.5 beds per thousand population. The same regulations specify a minimum of 4.5 beds per thousand in base areas, 4.0 beds per thousand in intermediate areas, and 2.5 beds per thousand in rural areas.

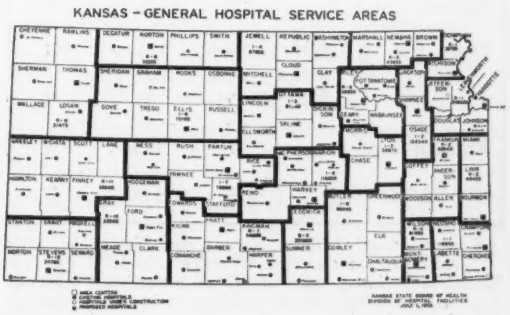


Figure 2. Since this map was issued, hospitals at Winchester and Attica have been completed.

The following table shows the number of general hospitals and acceptable hospital beds in each hospital service area of Kansas.

GENERAL HOSPITALS IN KANSAS

Region	*Area*	*No. of Hospitals*	*No. of Acceptable Beds*	*No. of Non-Acceptable Beds*
Kansas City	B-1	13	1359	341
	R-1	1	100	0
	R-2	4	144	0
	R-3	2	201	85
Regional Total		20	1804	426
Pittsburg	I-1	7	291	79
	R-4	4	261	14
Regional Total		11	552	93
Topeka	I-2	4	423	33
	I-3	3	213	0
	R-5	4	119	83
	R-6	3	159	96
Regional Total		14	914	212
Salina	I-4	6	259	26
	I-5	5	405	39
Regional Total		11	664	65
Wichita	B-2	9	1278	40
	I-6	11	699	32
	I-7	10	356	105
	I-8	7	438	28
	R-7	11	256	45
Regional Total		48	3027	250
Hays	I-9	8	323	0
	R-8	4	97	0
	R-9	5	198	0
Regional Total		17	618	0
Dodge City	R-10	6	152	41
	R-11	6	125	59
	R-12	5	93	51
Regional Total		17	370	151
STATE TOTALS		138	7949	1197

Source: Annual Revision, Kansas State Plan, 1955.

Note: Beds are classified as non-acceptable if they are located in buildings that are not of fire-resistant construction or have other serious deficiencies in fire protection. This designation does not reflect in any way on the medical care and treatment program of the hospital. Many of them provide excellent care even though the physical plant is obsolete.

DISTRIBUTION OF GENERAL HOSPITAL BEDS BY HOSPITAL AREAS

Area and Region	*Beds per 1,000 Population*
Kansas City	
B-1	3.8
R-1	3.2
R-2	2.2
R-3	4.3
Pittsburg	
I-1	2.4
R-4	4.2
Topeka	
I-2	3.1
I-3	5.8
R-5	2.5
R-6	2.7
Salina	
I-4	3.8
I-5	5.0
Wichita	
B-2	4.2
I-6	5.8
I-7	4.5
I-8	4.6
R-7	4.6
Hays	
I-9	4.6
R-8	2.9
R-9	6.3
Dodge City	
R-10	4.1
R-11	3.6
R-12	3.4

STATE HOSPITAL PLAN STATISTICS OF INTEREST

(1) An excess of general hospital beds (beds in excess of statewide ratio of 4.5 beds per 1,000 population from Kansas State Plan for Hospital Construction) exists in the following areas (see map):

Region	*Area*	*Counties*	*Approximate Population of Area*	*Number of Beds in Excess of State Ratio*
Topeka	I-3	Chase Lyon Morris	36,875	47
Salina	I-5	Ottawa Lincoln Dickinson Saline Ellsworth	81,230	39

STATE HOSPITAL PLAN STATISTICS OF INTEREST
(Continued)

Region	*Area*	*Counties*	*Approximate Population of Area*	*Number of Beds in Excess of State Ratio*
Wichita	I-6	Marion McPherson Harvey Reno	118,230	167
Wichita	I-8	Butler Greenwood Elk Cowley Chautauqua	95,045	10
Wichita	R-7	Edwards Pratt Kiowa Barber Kingman Harper Comanche	54,695	10
Hays	R-9	Cheyenne Rawlins Thomas Sherman Wallace Logan	31,475	56
Hays	I-9	Sheridan Graham Rooks Osborne Russell Ellis Trego Gove	70,190	7
		TOTAL		336

Hospitals in the following locations had a bed occupancy rate of less than 50 per cent.

Area	*City or Town*	*County*
R-2	Burlington	Coffey
I-1	Girard	Crawford
I-1	Pittsburg	Crawford
R-4	Fredonia	Wilson
I-3	Council Grove	Morris
R-5	Marysville	Marshall
R-5	Seneca	Nemaha
R-5	Sabetha	Nemaha
R-6	Manhattan	Riley
R-6	Onaga	Pottawatomie
I-4	Hanover	Washington
I-4	Washington	Washington
I-5	Ellsworth	Ellsworth
I-5	Lincoln	Lincoln
I-5	Salina	Saline
B-2	Wichita	Sedgwick
I-6	Marion	Marion
I-6	Goessel	Marion
I-6	Moundridge	McPherson
I-7	Hoisington	Barton
I-7	Ellinwood	Barton
I-7	Ness City	Ness
I-7	Larned	Pawnee
I-7	Little River	Rice
I-8	El Dorado	Greenwood
I-8	Arkansas City	Cowley
R-7	Kingman	Kingman
R-7	Hardtner	Barber
R-7	Anthony	Harper
I-9	Wakeeney	Trego
I-9	Hoxie	Sheridan
R-9	Atwood	Rawlins
R-9	Colby	Thomas
R-9	Oakley	Logan
R-9	St. Francis	Cheyenne
R-9	Goodland	Sherman
R-10	Bucklin	Ford
R-10	Spearville	Ford
R-10	Jetmore	Hodgeman
R-10	Fowler	Meade
R-11	Garden City	Finney
R-11	Lakin	Kearny
R-11	Syracuse	Hamilton
R-11	Tribune	Greeley
R-11	Leoti	Wichita
R-12	Satanta	Haskell
R-12	Liberal	Seward

Kansas State Board of Health, Division of Hospital Facilities, July 1, 1955.

A question which arises is, "What has been the effect of the Hill-Burton Act on hospital construction in Kansas?" At a meeting on May 21, 1953, the Kansas Advisory Hospital Council took action in recommending that no application for federal funds be favorably considered for a new hospital in any area that does not have at least 70 per cent occupancy in existing hospitals.

HOSPITALS CONSTRUCTED IN KANSAS WITH THE AID OF HILL-BURTON ACT FUNDS

Location	*Name of Hospital*	*Number of Beds* NEW ADD'N
Atchison	*Atchison	42
Burlington	Coffey County	20
Coffeyville	Coffeyville Memorial .	74
Coldwater	Comanche County ...	18
Columbus	Maude Norton Mem. .	22

HOSPITALS CONSTRUCTED IN KANSAS WITH THE AID OF HILL-BURTON ACT FUNDS
(Continued)

Location	*Name of Hospital*	*Number of Beds* NEW	ADD'N
Council Grove	Morris County	30	
El Dorado	Susan B. Allen Mem.		47
Fort Scott	*Mercy	173	
Fredonia	St. Margaret's Mercy	44	
Garnett	Anderson County	30	
Goodland	Boothroy Memorial		30
Greensburg	Kiowa County Memorial	20	
Iola	Allen County	30	
Kansas City	Univ. of Kansas Med. Center—Chest Disease Unit		116
Kansas City	*Univ. of Kansas Med. Center—Psychiatric Unit		77
Kansas City	*Bethany		94
Kansas City	*Providence		10
Kingman	Kingman		7
Kinsley	Edwards County	21	
LaCrosse	Rush County	20	
Larned	St. Joseph Memorial	48	
Lawrence	*Lawrence Memorial		86
Manhattan	Riley County	95	
Marion	St. Luke	30	
Medicine Lodge	Medicine Lodge Memorial	24	
Norton	Norton County	31	
Oberlin	Decatur County	22	
Ottawa	Ransom Memorial		30
Paola	Miami County	28	
Phillipsburg	Phillips County Community	18	
Pittsburg	Mount Carmel		48
Pratt	Pratt County	63	
Quinter	Gove County	20	
Smith Center	Smith County Memorial	26	
Topeka	Stormont-Vail		130
Topeka	St. Francis		40
Topeka	Menninger Foundation (Mental)		64
	TOTAL	907	821

* Under construction.

Kansas State Board of Health, Division of Hospital Facilities, September 27, 1955.

HOSPITALS CONSTRUCTED IN KANSAS SINCE 1946 WITHOUT THE AID OF HILL-BURTON ACT FUNDS

Location	*Name of Hospital*	*Number of Beds* NEW	ADD'N
Arkansas City	Arkansas City Memorial	91	
Atchison	Atchison		Remod.
Attica	*Attica District	12	
Atwood	Rawlins County	32	
Baxter Springs	Baxter Springs Memorial	34	
Bird City	Bird City	4	(now closed)
Bucklin	Bucklin Clinic	7	
Cedar Vale	Hays		10
Chanute	Neosho County	50	10
Coffeyville	Coffeyville Memorial		53
Columbus	Maude Norton Memorial		17
Concordia	St. Joseph	150	
Ellinwood	Ellinwood District	30	
Ellsworth	Ellsworth Co. Vet. Memorial		29
Emporia	Newman Memorial		40
Eureka	*Greenwood County	45	
Hanover	Hanover Clinic & Hospital	10	
Hardtner	Achenbach Memorial		15
Hays	Hadley Memorial		41
Hiawatha	Hiawatha	33	
Hill City	Graham County	17	
Hillsboro	*Salem		32
Hoisington	Hoisington Lutheran	45	
Hoxie	Sheridan County	14	
Hugoton	Stevens County	22	
Hutchinson	Grace		80
Hutchinson	St. Elizabeth		50
Jetmore	Hodgeman County	11	
Kansas City	Univ. of Kansas Medical Center		53
Kansas City	St. Margaret's	200	
Kiowa	Kiowa District	6	
Lakin	Kearny County	22	
Leoti	Wichita County	12	
Liberal	Epworth		30
Lincoln	Lincoln County	20	
Meade	Meade District	16	
Moundridge	Mercy		7
Ness City	Ness County	16	
Newton	Central Area (Mental)	40	
Newton	Axtel Christian		12
Oakley	Logan County	22	
Olathe	Olathe Community	30	
Plainville	Plainville Rural District	24	
Salina	Asbury		30
Salina	St. John's		30

* Under construction.

HOSPITALS CONSTRUCTED IN KANSAS SINCE 1946 WITHOUT THE AID OF HILL-BURTON ACT FUNDS
(Continued)

Location	*Name of Hospital*	*Number of Beds* NEW	ADD'N
Satanta	Satanta District	14	
Scott City	Scott County	24	
Sedan	Sedan City	28	
Seneca	Seneca		15
St. Francis	Cheyenne County	26	
Sterling	Sterling Community ..	23	
Sublette	Community	12	
Tribune	Greeley County	23	
Ulysses	Grant County	24	
Wakeeney	Trego County	28	
Washington	Washington County ...	32	
Wellington	St. Lukes		10
Wichita	St. Francis		110
Wichita	St. Joseph		114
Wichita	Sedgwick County	150	
Wichita	Osteopathic		20
Winchester	*Winchester	22	
Winfield	Wm. Newton Memorial		40
	TOTAL	1421	848

* Under construction.
(Note: The hospitals at Winchester and Attica have since been completed.)

Let us see the distribution of physicians in the various hospital service areas of Kansas. Table XXV gives this information and also the number of persons per physician in each area.

TABLE XXV
HOSPITAL SERVICE AREAS IN KANSAS
—1955

Region	*Area*	*County*	*Number of M.D.'s*	*Persons Per M.D.*
Kansas City	R-1	Doniphan	7	1543
		Atchison	18	1152
	*Area		25	1261
	B-1	Jefferson	10	1119
		Leavenworth	40	876
		Douglas	50	641
		Wyandotte	361	525
		Johnson	53	1987
	*Area		514	724
	R-2	Franklin	17	1191
		Coffey	6	1533
		Anderson	7	1435
		Allen	16	1084
		Woodson	4	1531
	*Area		50	1260
	R-3	Miami	22	854
		Linn	5	1829
		Bourbon	15	1186
	*Area		42	1089
Pittsburg	R-4	Wilson	9	1646
		Montgomery	39	1226
	*Area		48	1305
	I-1	Neosho	13	1586
		Labette	32	945
		Crawford	43	979
		Cherokee	16	1531
	*Area		104	1129
Topeka	R-5	Marshall	17	1033
		Nemaha	14	996
		Brown	9	1636
	*Area		40	1155
	I-2	Jackson	3	3539
		Shawnee	315	365
		Osage	6	2184
	*Area		324	428
	R-6	Riley	28	941
		Pottawatomie	9	1347
		Wabaunsee	2	3443
		Geary	13	1466
	*Area		52	1234
	I-3	Morris	6	1380
		Lyon	31	785
		Chase	4	1200
	*Area		41	913
Salina	I-4	Jewell	6	1510
		Republic	8	1335
		Washington	8	1580
		Mitchell	11	885
		Cloud	22	717
		Clay	8	1388
	*Area		63	845
	I-5	Lincoln	3	2196
		Ottawa	4	1761
		Dickinson	17	1285
		Ellsworth	10	910
		Saline	50	803
	*Area		84	1009

* Total number of physicians and number of persons per physician in the area.

TABLE XXV (Cont.)
HOSPITAL SERVICE AREAS IN KANSAS
—1955

* Total number of physicians and number of persons per physician in the area.

TABLE XXV (Cont.)
HOSPITAL SERVICE AREAS IN KANSAS
—1955

Region	Area	County	Number of M.D.'s	Persons Per M.D.
Wichita	I-7	Ness	3	2040
		Rush	5	1419
		Barton	25	1356
		Pawnee	14	695
		Rice	13	1164
		Stafford	7	1243
	*Area		67	1204
	I-6	Marion	14	1174
		McPherson	17	1386
		Reno	49	1181
		Harvey	60	401
	*Area		140	871
	I-8	Butler	21	1714
		Greenwood	7	1790
		Elk	1	6074
		Cowley	39	930
		Chautauqua	4	1688
	*Area		72	1362
	B-2	Sedgwick	401	741
		Sumner	25	1056
	*Area		426	760
	R-7	Edwards	5	1164
		Pratt	11	1145
		Kiowa	6	796
		Barber	6	1526
		Harper	11	927
		Comanche	4	908
		Kingman	8	1357
	*Area		51	1118
Dodge City	R-10	Hodgeman	1	3379
		Ford	20	967
		Gray	1	4883
		Clark	3	1219
		Meade	5	1059
	*Area		30	1217
	R-12	Stanton	1	1980
		Grant	1	4677
		Haskell	3	908
		Morton	2	1436
		Stevens	3	1425
		Seward	9	1297
	*Area		19	1484
	R-11	Lane	1	3101
		Scott	4	1256
		Wichita	2	1335
		Greeley	1	2099
		Hamilton	2	1600
		Kearney	2	1541
		Finney	11	1297
	*Area		23	1445

* Total number of physicians and number of persons per physician in the area.

TABLE XXV (Cont.)
HOSPITAL SERVICE AREAS IN KANSAS
—1955

Region	Area	County	Number of M.D.'s	Persons Per M.D.
Hays	R-9	Cheyenne	7	729
		Rawlins	4	1428
		Sherman	7	1004
		Thomas	7	1074
		Wallace	5	478
		Logan	1	4243
	*Area		31	1032
	R-8	Decatur	6	1016
		Norton	13	694
		Phillips	5	2047
		Smith	6	1400
	*Area		30	1125
	I-9	Sheridan	1	4539
		Graham	4	1358
		Rooks	7	1449
		Osborne	6	1402
		Gove	3	1463
		Trego	5	1081
		Ellis	28	704
		Russell	10	1327
	*Area		64	1114
	*STATE		2340	876

* Total number of physicians and number of persons per physician in the area.

Table XXVI shows the per cent of the state's population in each hospital service area, the average age of the physicians practicing in each area, and the per cent of physicians in the most effective age group (30-59 years) in each area.

TABLE XXVI
AVERAGE AGES OF PRACTICING PHYSICIANS IN THE HOSPITAL SERVICE AREAS OF KANSAS

Hospital Service Area	Per Cent of State's Population	Average/or Mean Age of Physicians in Years	Per Cent in Most Effective Age Group (30-59 Years)
B-1	18.3	42.1	85.7%
R-1	1.1	53.9	60.8%
R-2	3.0	57.3	62.0%
R-3	2.2	56.9	57.1%
I-1	5.8	53.8	59.6%
R-4	3.0	50.1	72.9%
R-5	2.3	52.5	65.0%

TABLE XXVI

AVERAGE AGES OF PRACTICING PHYSICIANS IN THE HOSPITAL SERVICE AREAS OF KANSAS

(Continued)

Hospital Service Area	*Per Cent of State's Population*	*Average/or Mean Age of Physicians in Years*	*Per Cent in Most Effective Age Group (30-59 Years)*
R-6	3.1	51.1	69.8%
I-2	6.8	43.2	82.4%
I-3	1.9	53.4	80.6%
I-5	4.1	50.8	69.0%
I-4	3.3	56.3	58.7%
B-2	15.8	44.4	81.3%
I-6	6.0	51.4	67.8%
I-7	4.0	50.3	69.1%
I-8	4.8	50.9	72.2%
R-7	2.8	49.1	72.5%
I-9	3.5	47.4	71.8%
R-8	1.7	53.3	60.0%
R-9	1.6	48.2	70.9%
R-10	1.8	45.5	80.0%
R-11	1.7	43.1	82.6%
R-12	1.4	46.4	84.2%
STATE	100.0	*47.0	**65.8%

* Not an arithmetical average of above figures, but an average of the ages of all physicians in the state.

** Not an arithmetical percentage of above figures, but the percentage of all physicians in the state.

The average age of all physicians in Kansas is 47 years. Table XXVI indicates that in Base Area 1, which includes Douglas, Jefferson, Johnson, Leavenworth, and Wyandotte Counties, the average age of physicians is 42.1 years, the youngest in the state. Undoubtedly this figure is weighted by the number of young men in Wyandotte County who are serving internships and residencies at the University of Kansas Medical Center. And 89.7 per cent of the physicians in this area are in the most effective age group, the highest per cent in the state.

In Rural Area 2, which includes Anderson, Allen, Coffey, Franklin, and Woodson Counties, the average age of physicians is 57.3 years. This is the oldest average age in the state. However, Rural Area 3, which includes Bourbon, Linn, and Miami Counties, is the area which has the lowest per cent of physicians in the most effective age group, as compared with all hospital service areas in the state.

Table XXVII shows the relationship between density of general hospital beds (in beds per 1,000 population) and physicians' services. It is seen that 48.7 per cent of the state's population lives in hospital service areas with 3.9 acceptable general hospital beds or less per 1,000 population. However, no area has less than 2 beds per 1,000 population. The average number of persons per physician for the entire state is 876. In those areas having 2.0 to 3.9 general hospital beds per 1,000 population there are 802.7 persons per physician. In the hospital service areas with 4 or more beds per 1,000 population, there are 991.8 persons per physician. So the difference is not too great.

TABLE XXVII

DISTRIBUTION OF PHYSICIANS IN RELATION TO GENERAL HOSPITAL BEDS

General Hospital Beds Per 1,000 of Population	*Per Cent of State's Pop.*	*Persons Per Physician*
0.0 to 1.9	0	0
2.0 to 3.9	48.7	802.7
4.0 and over	51.3	991.8
STATE—	100.0	*876.0

* Not an arithmetical average of above figures, but the number of persons per physician in the state.

TABLE XXVIII

DISTRIBUTION OF PHYSICIANS' SERVICES BY ACCEPTABLE GENERAL HOSPITAL BEDS PER 1,000 POPULATION

		Number of Physicians			
Beds Per 1,000	% OF STATE'S POPULATION	K.U.	OTHER KANS. SCHOOLS	OUT OF STATE SCHOOLS	TOTAL
0.0-1.9	0	0	0	0	0
2.0-3.9	48.7	497	40	707	1244
4.0 & over	51.3	460	16	620	1096
STATE	100.0	957	56	1327	2340

Table XXVIII shows the distribution of physicians by acceptable general hospital beds per 1,000 population in relation to the school of graduation. Kansas University graduates are about evenly divided between those areas with 2 to 3.9 beds per 1,000 population and those areas with 4 or more beds per 1,000 population. On the other hand, there are more out of state graduates in the former area than in the latter.

Of the 1,244 physicians practicing in areas with 2 to 3.9 beds per 1,000 population, 39.9 per cent are Kansas University graduates and 56.8 per cent are graduates of out of state schools. Of the 1,096 physi-

cians in areas with 4 or more beds per 1,000 population, 41.7 per cent are Kansas University graduates and 56.3 per cent have graduated from out of state schools.

TABLE XXIX

DISTRIBUTION OF PHYSICIANS BY HOSPITAL SERVICE AREAS OF KANSAS AND SPECIALIZATION

SERVICE AREA		*Number of Physicians* SPECIALTY CERTIFIED	NON-CERTIFIED	GENERAL PRACTICE	TOTAL
Kansas City	B-1	96	173	245	514
	R-1	3	3	19	25
	R-2	0	10	40	50
	R-3	3	7	32	42
Pittsburg	I-1	6	18	80	104
	R-4	0	2	46	48
Topeka	R-5	1	2	37	40
	R-6	4	6	42	52
	I-2	86	122	116	324
	I-3	9	4	28	41
Salina	I-5	18	12	54	84
	I-4	4	15	44	63
Wichita	B-2	104	138	184	426
	I-6	21	16	103	140
	I-7	2	9	56	67
	I-8	10	15	47	72
	R-7	0	0	51	51
Hays	I-9	5	4	55	64
	R-8	0	4	26	30
	R-9	1	4	26	31
Dodge City	R-10	3	3	24	30
	R-11	1	1	21	23
	R-12	1	2	16	19
STATE		378	570	1392	2340

Table XXIX gives the number of physicians as certified specialists, non-certified specialists, and general practitioners in each hospital service area of Kansas.

Summary

A general hospital has been defined as "any hospital for inpatient medical or surgical care of acute illness or injury and for obstetrics, of which not more than 50 per cent of the total patient days during the year are customarily assignable to the following categories of cases: chronic, convalescent and rest, drug and alcoholic, epileptic, mentally deficient, nervous and mental, and tuberculosis."

The Kansas Hospital Construction Plan is revised annually. The Hill-Burton Act was amended and expanded by Public Law 482 of the 83rd Congress to include, besides general hospitals, four new categories of medical facilities: rehabilitation facilities, diagnostic and treatment centers, hospitals for the chronically ill, and nursing homes. However, in this study only general hospital facilities have been included.

Kansas, with a population of 2,050,478, has 7,949 acceptable general hospital beds, or a rate of 3.8 beds per 1,000 population. No hospital service area in the state has less than 2 beds per 1,000 population. Rural Area 2, which includes Anderson, Allen, Coffey, Franklin, and Woodson Counties has the lowest rate in the state—2.2 beds per 1,000 population. There is a higher ratio of persons per physician in those areas with 4 or more beds per 1,000 than in those areas with 2 to 3.9 beds per 1,000 population.

General Discussion

There are many questions which have been left unanswered in this study of the distribution of physicians, physicians' services, and general hospital beds in Kansas.

No attempt has been made to assess the quality of medical care by physicians in Kansas. Therefore, this has been purely a quantitative survey. The quality of general hospital beds has been noted as acceptable or non-acceptable, in accordance with the "Hospital Construction Plan" of the state. Non-acceptable or unsuitable beds are those in an institution which is considered to constitute a public hazard. These facilities are considered as being non-acceptable only from the structural standpoint. This designation reflects in no way on the medical care and treatment program. So again, the quality of medical care provided by physicians in hospitals has not been involved in the survey of physicians in relation to general hospital facilities.

This study has used geographical areas of the state, rather than population characteristics, as the basis for a survey of variation in physicians' services and hospital services. For this purpose, the division of the state into 23 hospital service areas, according to the Kansas Hospital Construction Plan, was used.

The over-all ratio of the number of persons per physician in Kansas was found to be 876. As was to be expected, there was rather wide variation of this ratio in different parts of the state. Shawnee County had a ratio of 365 persons per physician, which was the lowest in the state, as compared with Gray County with 4,883 persons per physician, which was the highest in the state. One cannot set up a standard ratio which would be applicable to all areas, as many factors enter into the matter, such as distance, accessibility, etc.

The average age of all physicians in Kansas today is 47 years, which is younger than was expected. Per-

(Continued on Page 386)

Intoxication with Thiocyanate

Report of One Case and Review of the Literature

A. H. GREENHOUSE, M.D., ***Garden City***

The physician who is confronted with a bizarre and peculiar clinical picture must always consider the possibility of an intoxication, be it with medication, food, beverage, or industrial, chemical, or noxious gas. Likewise, in prescribing a medicine, its toxic potential must always be borne in mind, for even a cursory perusal of the recent literature would convince the most skeptical that practically any drug is likely to produce an untoward reaction.

Among hazardous medicines employed by doctors, potassium thiocyanate has always occupied a prominent position. Yet, despite its well advertised dangers, it is surprising to discover that this medication is still widely employed without any regard to the potential hazards involved. At a recent hospital staff meeting, when the case to be described below was discussed, several physicians stated that they still employed potassium thiocyanate in the treatment of hypertension, considered it innocuous, and never checked thiocyanate blood levels. As will be pointed out in the discussion to follow, most authorities do not consider potassium thiocyanate effective in the treatment of high blood pressure, and all experienced in its use consider it extremely dangerous. The following case of intoxication with this medicine occurred insidiously while the patient was under medical supervision.

Case Report

The patient is a 58-year-old white female employed in a clerical position. She was first seen in the office on September 13, 1956, at which time she complained that she had felt "peculiar" for several months and had had progressive visual difficulty in recent weeks. She stated, "Things blur and I just can't see right." She had not been able to see figures properly while doing bookkeeping and had made many errors while calculating. Two weeks prior to this consultation she had had her eyes refracted, and new glasses were prescribed without benefit.

She also complained that in recent weeks her hearing had become defective, although she was unable to state precisely what she had considered wrong. Her appetite was good, she had lost no weight, but she did complain of intermittent nausea, weakness, dizziness, and difficulty in thinking. Her son stated that she talked peculiarly and that on several occasions she had seemed confused and irrational.

Of great importance in her past medical history was the fact that for about 15 years she had been treated for hypertension with some "red tablets." She had taken a variable amount of this medicine but recently had been on "two or three" tablets twice daily. During this entire period she had received periodic checks by a physician, but at no time had blood studies of any type been made. Conversation with the patient's druggist confirmed that she had been taking potassium thiocyanate.

The patient described is a 58-year-old white female who had been using thiocyanates for 15 years without adequate safeguards to avoid poisoning. Symptoms of intoxication included visual and auditory hallucinations, anemia, lethargy, and mental confusion. It is emphasized that side effects of the drug may threaten life and that the physician must be alert in diagnosing obscure clinical syndromes.

Physical examination revealed a chronically ill-appearing, pale, white female who was obviously hard of hearing. Her blood pressure was 160/90, her pulse rate was 90 and regular. The main physical findings included normal eyegrounds, no enlargement of the thyroid gland, a normal sized heart with normal heart sounds, and diffuse abdominal tenderness. No other positive physical findings of any note were present.

Because of the patient's obvious illness, she was hospitalized. The following laboratory data were obtained: Her voided urine was loaded with white blood cells; there was no sugar; a trace of albumin was present; specific gravity was 1.011. A catheterized urine specimen showed only occasional pus cells. Sedimentation rate was 10 mm. in a half hour and 17 mm. in an hour. Fasting blood sugar was 106 mg. per cent and nonprotein nitrogen was 43 mg. per cent. Red blood count was 3,110,000, white blood count was 6,100, and hemoglobin was 9.45 grams (61 per cent). A differential count was normal. Total proteins were 9.2 grams with 6.8 grams albumin and 2.8 grams globulin. Cholesterol was 230 mg. per

cent. Chest x-ray showed normal heart and lung fields. An electrocardiogram was within normal limits. Blood thiocyanate level on September 13, 1956, was 19.5 mg. per cent. The patient's protein-bound iodine was reported as 7.2 gamma per cent.

The patient slowly but definitely improved and stated that her malaise was subsiding. Parenteral fluids were given for several days in an effort to hasten renal excretion of the thiocyanate. No other medications were administered. At the time of discharge, two days after admission, she still complained of visual and auditory difficulties and slight nausea, but it was felt that she could be sent home without further treatment since recovery would merely be a matter of further renal clearance of the thiocyanate. Her hemoglobin at discharge, September 15, 1956, was 10.40 grams.

She was seemingly doing well for a few days following hospital discharge, but she suddenly began experiencing increasing malaise and developing a high, spiking fever. She was readmitted to the hospital on September 24, 1956, at which time her temperature was 103.8 degrees, she was experiencing a shaking chill, and she appeared extremely pale as well as acutely and chronically ill. Her blood pressure was 130/90 and she complained of pain upon palpation of the left costovertebral angle, but otherwise there was no particular change from the previous physical examination.

Laboratory work at this time revealed a hemoglobin of 8.2 grams (53 per cent), white blood count of 5,600, red blood count of 2,600,000. The urine was loaded with pus cells and showed a 2 plus albumin. A urine culture showed E. coli which was moderately sensitive to tetracycline and chlortetracycline and highly sensitive to Furadantin and chloramphenicol. Nonprotein nitrogen was 45.5 mg. per cent. Stool was negative for occult blood. Blood thiocyanate level, done on September 25, 1956 (12 days after the original determination), was 9.1 mg. per cent.

A chest plate was again interpreted as within normal limits. Intravenous pyelograms were done and were reported by the radiologist as showing blunting of the calyces of the left kidney, whereas the right kidney appeared normal. The radiologist felt that this was consistent with pyelonephritis of the left kidney.

Her second hospital course was initially stormy. She was started on Chloromycetin 1.0 gram intramuscularly every 12 hours and was given parenteral fluids becauses of nausea and consequent inadequate oral fluid intake. Because of her anemia, felt to be related to thiocyanate intoxication, she was given two transfusions of whole blood. From her admission on September 24 until September 29 she continued to run a high fever with several temperature spikes each day to 102 and 103 degrees, associated with shaking chills. However, she gradually began to improve. On September 29 her hemoglobin was 11.35 grams (74 per cent), and her urine showed an occasional pus cell and a trace of albumin, and on October 4, 1956, her blood thiocyanate level was reported as 0 mg. per cent. By October 5 she felt strong and well and stated that her hearing had returned to normal and that her vision was markedly improved. At this time her blood pressure was 160/90. Her urine was completely normal, whereas her blood count was 4,200,000 and hemoglobin was 13.2 grams. When seen at the office on two separate occasions, one week and three weeks after the second hospital discharge, she felt well and strong and had no particular complaints.

Pharmacology of the Thiocyanates

According to most authorities, the thiocyanate ion is not dissociated in the body into cyanide and, therefore, has no action in common with cyanide. These individuals feel that the cyanides are detoxified in the body to the stable and much less toxic thiocyanate. However, more recent work has been said to show an in vivo conversion of SCN to Cn, probably occurring as an enzymatic process within the erythrocyte, a reaction probably responsible for some of the toxic efforts of the thiocyanates. Pharmacologically, the thiocyanate ion is said to have two major actions in the body, resembling both the iodides and the nitrites. Thus, they can produce the cutaneous and mucosal reactions considered typical of the iodides, including coryza and acne, as well as the smooth muscle relaxing properties of the nitrites. Supposedly, the latter ability is responsible for the use of the thiocyanates in hypertension.

Thiocyanates are readily absorbed from the intestinal tract, and the ion is distributed through the extracellular fluids in a manner similar to that of the chlorides and bromides. This ion is not altered in any manner in the body with tissue cells apparently being impermeable to it, and for this reason thiocyanates are used to estimate the volume of the body's interstitial fluids, the so-called thiocyanate space. The kidneys are the main route of thiocyanate excretion from the body, but the rate of excretion is extremely variable and unpredictable, a fact which leads to the main difficulty in their employment clinically.

Clinically, the thiocyanates have been used for the treatment of hypertension since 1903; they have no other medicinal indications. Quite early after the drug's introduction its toxicity was recognized and its use was quite limited until 1925, when it began enjoying a wide popularity which has not completely diminished even at present.

There is much disagreement in the literature as

to the thiocyanates' actual efficiency in lowering the blood pressure. Some authors maintain that any effect is very poor, whereas others claim a definite and predictable response in a fairly large percentage of cases. There seems to be general agreement among most observers that thiocyanates, aside from their debatable blood pressure lowering properties, are most definitely useful in the symptomatic relief of some side effects of hypertension, with abatement of hypertensive headaches being particularly prominent. It has been shown that intravenously administered thiocyanates are unusually effective in the rather rapid relief of the headache of high blood pressure when other methods have failed consistently.

Most experienced clinicians feel that when the drug is administered orally, a thiocyanate blood level of 8-12 mg. per cent must be reached before any appreciable effects are noted. These levels must be rigidly adhered to, as higher levels are almost invariably toxic and lower levels are generally ineffective.

Authors definitely agree that all patients receiving thiocyanates must be watched extremely closely for untoward effects. The only method of adequately controlling dosage is through frequently performed thiocyanate blood levels, since the maintenance dose needed to obtain hypotensive effects without toxic side reactions varies widely from patient to patient and from time to time in the same patient. Fortunately, the performing of thiocyanate blood levels is simply and easily done. During the time that this drug was more widely used, kits for this purpose were available through one of the large pharmaceutical houses. Thiocyanate determinations can be easily performed on most photoelectric calorimeters.

Toxic Effects of the Thiocyanates

Undoubtedly the most outstanding feature of the thiocyanates is their unusually broad spectrum of toxic side effects. Although it is widely believed that thiocyanate is not converted to cyanide in the body, there is now evidence to controvert this view, for it has been demonstrated that there is an in vivo conversion of thiocyanate to cyanide, probably as a result of an enzymatic process within the erythrocyte. Cyanide, of course, depresses cellular utilization of oxygen by inhibition of cytochrome oxidase, producing histotoxic anoxia, and it is quite probable that many toxic reactions to be described are due to this mechanism, particularly the central nervous system manifestations.

Innumerable reactions to thiocyanate are cited in the literature. Among the milder untoward symptoms that are often noted when blood thiocyanate levels are still in the so-called "therapeutic range" are lethargy, fatigue, cramping of the calf muscles, weakness, signs of coryza, itching, nervousness, irritability, and various types of dermatitis, including some rather severe skin reactions. Various types of abdominal and gastrointestinal complaints have been recorded, including vomiting, diarrhea, epigastric pain, et cetera. Enlargement of the thyroid gland is quite apt to occur with prolonged ingestion of this drug, resulting in the so-called "thiocyanate goiter"; experimental studies have revealed that the thiocyanate radical is responsible for this effect of preventing the uptake of iodine by the thyroid gland.

Since reactions to thiocyanate are extremely common and are responsible for making these drugs therapeutically unacceptable in hypertension, unfortunately, some of these reactions have been demonstrated to occur with "safe" thiocyanate blood levels of 8-12 mg. per cent. The afore-mentioned symptoms can occur in a severe or exaggerated manner, such as fatal exfoliative dermatitis, explosive and exsanguinating bloody diarrhea, vascular collapse, and various types of confused states.

Psychotic reactions to thiocyanates are frequent and can pose rather difficult diagnostic problems; in fact they have often been confused with other psychoses as well as cerebral vascular diseases. It has been emphasized that thiocyanate levels should be included, along with bromide levels, as routine tests in any person with an obscure delirious or psychotic state. Anemia, sometimes of fairly profound degree, has occurred with thiocyanate poisoning. Auditory and visual hallucinations are mentioned in certain case reports, which is of interest since the patient in this discussion demonstrated such a finding. There are several reports of death attributed to chronic thiocyanate poisoning.

The foregoing long list of serious effects due to thiocyanate medication is an impressive one. The benefits of this substance are doubtful, to say the least, and, in view of recent advances in the pharmacotherapy of hypertension, it becomes increasingly evident that thiocyanates should be deleted from the physician's armamentarium. Yet this view has certainly not found universal acceptance, and thiocyanates are still in moderately wide use, often without true appreciation of their extreme dangers. The patient described in this paper was under constant medical supervision. Other physicians in this area stated that they employed potassium thiocyanate, felt it to be harmless, and did not determine blood levels.

A few words are necessary about treatment of thiocyanate poisoning. The main principle is to promote renal excretion of this material by employment of high fluid intake; parenteral fluids frequently must be administered because of nausea and other gastrointestinal symptoms. It would seem conceivable that

(Continued on Page 386)

Tracheo-Esophageal Fistula

Surgical Therapy for Nine Patients with Congenital Atresia of the Esophagus

JOHN G. SHELLITO, M.D., *Wichita*

Nine patients operated upon for congenital atresia of the esophagus and tracheo-esophageal fistula are discussed, with mention of one survivor, now 1½ years of age. Surgical delay, during which formula or gastric secretion may enter the lungs, is a common cause of death. Primary tracheotomy and gastrostomy are advocated.

We are indebted to Ladd and Swenson[1] for early recognition of tracheo-esophageal fistulae. The five types of general malformation were described well by Ladd[1] in 1944 (Figure 1). Ladd and Swenson[2] have discussed operative procedures for each. It was felt that the operation of primary anastomosis was the procedure of choice. In circumstances where the ends of the esophageal segments were so far apart that they could not be sewed together, a multiple stage procedure was advised.

Ladd and Swenson[2] reported a mortality rate of from 36 to 76 per cent. It is in an effort to add some slight reduction in this mortality rate, that we present this small series of cases (Figure 2).

Ladd and Swenson have presented simplified diagrams of the various types of tracheo-esophageal anomalies (Figure 1). In the main, one is concerned with the patient in whom an end to end anastomosis can be accomplished.

In 1951, Ferguson[3] presented five cases in his published thesis to the American Laryngological Society, patients with tracheo-esophageal fistula not associated with a constriction or atresia of the esophagus. This adds a further type to those described by Ladd and Swenson, or perhaps should be incuded in their fifth category as demonstrated (Figure 1).

In 1954, Ware and Cross[4] presented an additional case history and reviewed the literature on tracheo-esophageal fistulae without atresia or constriction of the esophagus. They were able to find 26 patients reported in the literature as having had this condition. Surgery was advised as the best method of cure.

Discussion

The surgical procedure possible in any congenital anomaly depends in large part upon the anomaly itself. Prior to a surgical procedure, even in these newly born, often premature children, it is possible to make a tentative diagnosis. Usually it is possible to tell whether or not there is any chance of success by the passage of a tube via the nasopharynx into the upper segment of the esophagus. Lipiodol or Urokon is the liquid of choice, and not barium, for visualization by x-ray. The presence of air in the gastrointestinal tract betrays the connection of the lungs to the stomach. In such an instance, fortunately the most common one, it is logical to assume that an anastomosis can be accomplished.

In 1955, Battersby[5] presented 90 cases of congenital lesions of the esophagus. Of these, 87 per cent were patients with esophageal atresia and tracheo-esophageal fistula. Thirteen per cent had other esophageal anomalies. A survival rate of 66 per cent was presented for a five-year period. We cannot say as much. The operative technique in the above series was gastrostomy and indwelling nasal-gastric string for dilatation purposes.

In a review of our own series it is seen that these children are often premature with a low birth weight. Only two of the nine children weighed over six pounds. A weight of around four pounds was usual.

All of the babies had pneumonia, either when operated upon or shortly thereafter. The time of surgery in relationship to the time of birth, therefore, becomes of prime importance. The child's chances of survival are decreased if a diligent pediatric nurse has

Presented at a meeting of the Kansas Chapter, American College of Surgeons, Newton, September 16, 1956.

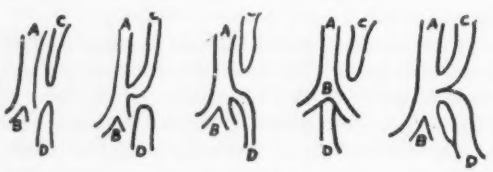


Figure 1

	CASE	WT. LBS.	DAYS POST DELIVERY	SURGICAL PROCEDURE	LIVED TO (DAYS)	TRACHEOTOMY	GASTROSTOMY	CAUSE OF DEATH
1	30440	7 1/2	3	Esophago-Esophagostomy (Elsewhere)	8	No	No	Pneumonia
2	36242	4 1/2	1 1/2	Esophago-Esophagostomy	1	No	No	Cardiac Failure Tetrology of Fallot, Plus Coaretation Aorta and Patent Ductus
3	38927	5	3	Esophago-Esophagostomy	4	Yes - Late	No	Pneumonia
4	47366	2 1/4	3	No Upper Segment	1/2	No	No	Pneumonia
5	72165	4 3/4	1 1/2.	Esophago-Esophagostomy	1/4	No	No	Pneumonia and Sub Dural Hemorrhage
6	76144	4	2	Ligature Fistula and Janeway Gastrostomy	1 1/2	No	No	Pneumonia
7	101385	4 1/2	3	Esophago-Esophagostomy	1 1/2	No	No	Pneumonia
8	108060	6	3	Esophago-Esophagostomy	3	No	No	Pneumonia
9	111019	4	2	Esophago-Esophagostomy	Alive	Yes	Yes	----

Figure 2. Diagram showing the arrangement of the trachea and esophagus in the various types of esophageal atresia and tracheo-esophageal fistula. The letters refer to the following structures: A—trachea; B—bifurcation of trachea; C—upper segment of esophagus; D—lower segment of esophagus. (From New England Journal of Medicine 230:625-637, May 25, 1944.)

made consistent efforts to feed the child. The hope of survival lies in the establishment of the diagnosis as early as possible. In this way the lungs will not have to cope with so much formula.

An immediate tracheotomy will allow pediatric nurses to suck away excessive secretions incident to pneumonia. The survival of the child is in direct relationship to the severity of the pneumonia and the ability of the child and the physician to cope with it.

A gastrostomy enables feeding via the gastrostomy tube in the postoperative period. It also enables retrograde dilatation of the esophagus if this becomes necessary. In our patient, who is now 1½ years old, this stricture is well treated by dilatation. Battersby[5] cites an incidence of postoperative esophageal stricture of 66 per cent.

In the light of our uniformly bad results prior to the use of primary tracheotomy and gastrostomy, it is felt that these latter two additional procedures account for the single success.

The Wichita Clinic
3244 East Douglas
Wichita 8, Kansas

Bibliography

1. Ladd, W. E.: The surgical treatment of esophageal atresia fistula, New England J. Med. 230:265-637 (May 25) 1944.

2. Ladd, W. E., and Swenson, O.: Esophageal atresia and tracheo-esophageal fistula, Ann. Surg. 125:23-40 (Jan.) 1947.

3. Ferguson, C. F.: Congenital tracheo-esophageal fistula, not associated with atresia of the esophagus, Laryngoscope, 61: 718-765 (Aug.) 1951.

4. Ware, G. W., and Cross, L. L.: Congenital tracheo-esophageal fistula without atresia of the esophagus, Pediatrics, 14:254-258 (Sept.) 1954.

5. Battersby, J. S.: Congenital Anomalies of the esophagus, Arch. Surg. 71:560-570 (Oct.) 1955.

PRESIDENT'S PAGE

DEAR DOCTOR:

The Committee on Medical Economics has always been one of our most productive committees. And much of the fruit of its labors has been borne in the field of insurance.

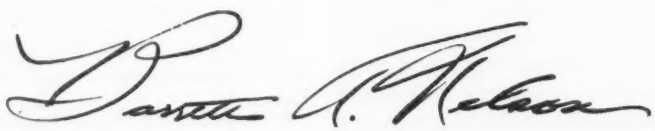
Society members have distinct and definite advantages under the plans developed by the committee for "group" purchase of coverage. The unique group life insurance plan now being presented was developed in detail by the committee itself following several years of study and research. The underwriting company was carefully selected from a number of sound reliable companies after thorough investigation.

The plan is based on a fixed premium of $100 per year with the greatest coverage for the younger doctor, for example $20,000 at age 25. Obviously coverage is less at older ages, but at all ages it offers more than can be purchased in any other insurance available to individuals. Furthermore, if 60 per cent of eligible members enroll, the underwriter will accept all impaired risks who are otherwise denied insurance because of physical disability.

But applications must be made during the present limited enrollment period. All our members and particularly the younger members, who in most instances carry grossly inadequate insurance protection for their families, are urged to file application at once. The executive secretary has full information in his office.

The committee also will present in the near future an improved disability plan for sickness and accident protection, offering broader coverage at lower costs. Details will soon be available.

Fraternally yours,



President

EDITORIAL COMMENT

The Year in Review

Editor's Note. A picture of medicine in Kansas during the past year was presented to the House of Delegates last month by Dr. Clyde W. Miller, who retired as president of the Kansas Medical Society on May 7. Excerpts from his address are printed below.

Thanks to every physician in Kansas for making this year a most memorable one. To all of you who gave so much of your time, serving the profession in many ways, and who gave so generously and unselfishly financially—one cannot express his gratitude for such generosities.

This year has brought to me many experiences and mixed emotions, but truthfully I have enjoyed doing my part and carrying out your wishes and desires.

It has been impossible to visit each component society, and I sincerely hope that you all understand the reasons. To those societies that I did visit, thanks for the wonderful time and how nice it was to renew old acquaintances with all of you.

The past year has been an active one, and several major items were accomplished. Much traveling was done to various sections of the United States. It was a pleasure to attend the A.M.A. meeting in Chicago where I watched our own delegates work. They did a wonderful job there as we knew they would. One cannot emphasize enough the work that our delegates put forth at these meetings, and I feel that the House of Delegates should commend them for such outstanding work. The interim session at Seattle in November was most important since the Code of Ethics as submitted previously was to be discussed and decided upon. One of our delegates was chairman of the Reference Committee that handled this question and again displayed his abilities and leadership in handling this subject, which of course was the most important item of this session. His report as submitted was accepted without question, and I must add that this is an honor.

During the past two A.M.A. meetings the Council authorized the Kansas delegates sufficient funds to maintain a Kansas room for entertainment for our own members who attended as well as other delegates at the meeting. To me this is a great project and should be continued in the future, and I would so recommend.

Medicare came during this year with many hours of work and meetings both locally and nationally. Kansas was represented at all national meetings. I believe that our contract and fee schedules were good ones, and I sincerely hope that this schedule has met with your approval. This program may not be what we want, but we would have been foolish not to have participated. This may lead to other programs in the future. In fact, it probably is the formula upon which other groups will attempt to obtain government paid health services, so we should be prepared in our thinking to decide if we want this expanded. If we do not, we should prepare now to prevent other groups from being included, and I so recommend.

Blue Shield was designated the fiscal agent for this Medicare Program. They are responsible for disseminating material such as fee schedules and for paying the prescribed fees. Unusual problems and fees will be solved by the Medicare Review Committee, which, I might add, has already held one session. Any decisions made by this committee must have final approval from the Army Department which is the administrator for the Defense Department.

During January, 1957, a special meeting was called at Chicago by the A.M.A. to discuss the polio immunization program. At that time every state was represented and advised to proceed on a state plan for immunization for all people 20 to 40 years of age. Thus, all ages from 6 months to 40 years would have the opportunity to receive the Salk vaccine. We were assured that ample vaccine was and would be available. Little was done about this procedure in Kansas, and possibly we are lucky since a severe shortage in vaccine developed in a short period of time. As you all know, at this time vaccine is only trickling into the state, and the demand is much more than the supply. More confusion exists, and this is not good for public opinion.

I feel that such a program should not be started until we are assured that the vaccine is ample to meet the demand. I feel that the doctors in our state could solve such problems if we are allotted the vaccine, thus keeping government control out of the picture.

I wish to recommend two things for your consideration:

1. That each component society set a maximum charge for polio immunizations and that each member be expected to set his fees in accordance with that figure.

2. That as a protest against the growing custom of mass immunizations at free clinics, which is not in accordance with good medical care, and because public and private agencies have failed to provide leadership in this program—the Kansas Medical Society should not endorse any group until such time as the polio immunization program is stabilized.

A special session of the House of Delegates was held at Wichita in October, 1956. The main objectives of this meeting were to decide on the Medicare

problem and to discuss the newly revised Medical Practice Act that was authorized at the May, 1956, meeting. The decision was unanimous to proceed with the effort of passing the bill in the oncoming meeting of the legislature in January.

Many meetings were held with the osteopathic profession and final agreement and understanding were reached. You know the results. We now have a new Practice Act with a composite board—five medical doctors, three osteopaths, and three chiropractors. We have a new Basic Science Bill which now requires all graduates to pass an examination before they are permitted to take any section of the composite board. There was a little change in the bill, and this was that no more than two members of the board of five should come from any one state school. This actually was better than we anticipated, since we were thinking of only one from any such school.

These bills, 281 and 282, will become effective July 1, 1957, and all previous licenses will expire June 30, 1957. May I say now that it will be most important that each of us register with the Medical Board of Registration before this date. It may save much controversial discussion in the future.

It is hoped that each one of our profession will be tolerant and patient. It will take many months to complete this integration, and the new Board will find many problems in implementing this bill. However, it will work. It must!

We believe that the majority of the membership of all professions want this to be successful, but some are suspicious of medicine and view our position with alarm. I, therefore, leave for your consideration several additional suggestions as follows:

1. We should let it be known publicly that the Kansas Medical Society intends to exert no influence whatever over the Board of Basic Science Examiners, either as to the appointment of its personnel or as to its activities, until or unless this board acts contrary to its legal responsibilities. Should that happen, we would as citizens take steps to correct the fault. Until then, the physicians of Kansas accept the presence of this board as another means of raising the standards of health care for this state, but have no interest whatever in its operations nor do we presume to control any phase of its activities.

2. Since our actions will be watched by political and professional persons who want to find an excuse for repealing the acts, I propose we conduct ourselves with exceptional care on every activity that can relate to this subject.

3. I propose that we most studiously avoid any attempt to compromise, that we comply with the principles in which we believe, and that no branch of the healing arts be permitted to deviate materially therefrom. But I propose that we fight with equal vigor any effort to require anything of any other group that medicine is not willing to abide by also.

It has been a wonderful experience, and I hope that this year you too have obtained some of the same experiences. In spite of all this it will be a pleasure to turn over the gavel to Dr. Nelson. His leadership will produce a wonderful year, and his experiences to come, I am sure, will be as pleasurable as mine. As I retire may I thank you all for the honors bestowed upon me as president of the greatest medical society in these United States, and long may it reign in this leadership.

This Society has many active committees at work at all times, and there are new committees being formulated with specific programs for the ensuing year which, of course, will increase the financial strain on our budget. If we are to continue with our progress, it will be necessary to have more funds available for these projects. Likewise, it is now time to adjust or increase salaries. No organization can be effective without a progressive program which, of course, costs money.

With all the above in view, I believe that it would be wise to increase our state dues. The House of Delegates has previously approved maximum dues of $50. The Council sets the dues, as you know, and at the present time the amount is $40 per year. I would suggest that you strongly urge the Council to raise the dues to $50 per year so that the program planned may be accomplished.

We are one of the few states charging less than this amount, and I must say we have done well with the funds that were available. However, it is now time to have such an increase to accomplish our desire in other fields. Our public relations is an important field that has been too long neglected and by all means needs more attention. This alone will require a good sum of money. This committee has many avenues to progress. It lacks only the funds to implement it. We must keep ourselves before the public. We must continue to give them information and knowledge that they desire and demand.

Clyde W. Miller, M.D.

The Year to Come

Editor's Note. The course of the Society during the coming year, as outlined by Dr. Barrett A. Nelson, president, was reported to the House of Delegates of the Society in the form printed below.

The new administration finds much of its work already laid out. So much important Society activity is already in high gear, asking only for guidance and a continuous flow of motive power.

The Medical Practice Act and Basic Science Law offer a challenge. They demand intelligent planning and purposeful energy to insure proper implementation and application of these measures. It is almost unbelievable that the proposed bills become law with only a minimum of alteration and amendment. Yet, there is much to be done before their ultimate purposes are achieved. There will be rough spots. There will be disturbing problems of adjustment and compromise. There will be entirely new policies and readjusted standards to be established, always remembering that every action is based on raising, as well as maintaining, high quality of medical care.

The Medicare program of medical care for dependents of those in the uniformed services was carefully planned and effectively inaugurated last year. Most interesting findings are being experienced. The growing burden of paper work in the physician's office has been greatly augmented by this program. There are fees in need of further adjustment. There are rulings to be clarified. Certainly in the regions affected there has been an appreciably increased patient load with the accompaniment of various problems.

Use of Salk anti-poliomyelitis vaccine, the most heavily publicized, most widely accepted public health measure of all time, will continue to offer problems of policy; problems of proper and effective distribution; effective methods of co-operation and ethical control of administration. Properly approached, there is here an outstanding instrument for wonderful improvement of public relations, a priceless opportunity to build for ourselves inestimable good will.

The Committee on Medical Economics is capitalizing on the broad experience of insurance programs in other states. It has already initiated an extended disability insurance program which will be of great interest and, they believe, widely accepted. Coverage will be greatly extended. There will be increased benefits at reduced costs, particularly for the younger men who will have reduced premium costs instead of paying equally with the older poorer risks. Furthermore, there will be a master policy under our complete control, and the company is to report periodically on plan experience with a view to increasing benefits or lowering rates where feasible. And this is with approval already obtained from the Kansas Commissioner of Insurance. The committee is continuing to explore possibilities for advantage in group purchase of life insurance, catastrophic insurance, and medical-surgical coverage for our membership. As one doctor put it, "I'm tired of buying golf clubs and unneeded luggage for the doctor who treats my family. I want him adequately compensated by a good surgical and medical policy, so my wife won't feel like a nuisance and a charity patient."

Social Security!!! Exploration and debate are in order. Is it a great bargain the doctors are missing? Or is it actually far too expensive for what it offers, with no return at all for most of the doctors who would pay the compulsory tax? Or is it chiefly a premium paid for a return withheld from the man who wants to continue to offer his services and is likely not to live long enough to ever receive a return? Good meat for the teeth of a committee that can separate facts from propaganda.

Another very important program barely in full swing is that of the Safety Committee. We *must* make our influence felt to help stop the terrible toll of deaths and serious accidents on the highways, in traffic in the cities, with tractors and machinery on the farm, as well as the less recognized huge toll in the home, and especially the high accident death and injury rate for children.

Then there are the continuing effective works for cancer control, the excellent programs started for medical assistants, allied groups, maternal welfare, child welfare, school health, the American Medical Education Foundation badly in need of much more of our support, continued co-operation and encouragement for the outstanding accomplishments of the Woman's Auxiliary.

If the entire Society were to concentrate on only one project, it probably should be mental health. In no area is there greater vital need, need for better understanding of psychiatric problems on the part of our membership, need for closer liaison, mutual understanding and communication, with those who specialize in psychiatry, need for availability of psychiatric care, local mental health clinics widespread over the state, psychiatric beds in general hospitals, vastly more easily obtainable psychiatric treatment for children, education of the family physician so he may learn how to utilize for his patients the facilities now available, removal of the roadblocks to a proper commitment law, encouragement of the valiant efforts of the state and county mental health associations. And can someone solve the problem of obtaining competent psychiatric care for the great self-respecting middle class who want to pay their own way, who want something more than charity in the improved but still inadequate state institutions, but who cannot possibly meet the costs of care in the lavish private psychiatric hospital at such rates as

$15,000 per year? In some cases for year after year after year? "Is a puzzlement."

There should be a much closer tie between the medical society and Kansas Physicians' Service, Blue Shield. Active interest, active participation in formulation of policy, expansion of services, closer understanding of the philosophy underlying *our* prepayment plan, greater comprehension of the tremendous worth of its present form, not to mention the enormous potentiality for further service to our patients in the ever present economic problems of illness. Here stands a most potent force for effective public relations.

Public relations have not had one-fourth of the attention urgently called for, press relations, county grievance committees, systematized 24-hour services, full use of radio and television, liaison with official agencies, liaison with the bar association, liaison with the hospital association, liaison with such local organizations as the Chamber of Commerce, PTA, school boards, civic organizations.

The Centennial Year, 1959, is just around the corner. With the promise of a vigorous, resourceful, efficient leadership, it should be a history making year. Meanwhile, there are huge tasks to be completed in preparation.

One segment should be busy studying and interpreting federal legislation for us. They should furnish regular reports and periodically prod our interest in what goes on. Maybe occasionally even a gentle prod toward concerted action of some sort. The weekly bulletins from the A.M.A. Washington Office should be perused and salient material mimeographed for interested committees, some of it for the county secretaries, some of it even for the entire membership (naively trusting them to read it). How many realize that three federal agencies are each spending the greater part of a billion dollars in their medical-health budgets for this fiscal year? Veterans Administration—825 million. Defense Department —790 million. Department of Health, Education and Welfare—772 million. Maybe somebody should keep in touch and ponder a bit. Actually, our Woman's Auxiliary is more familiar with federal legislation than we are.

Yes, indeed, a lot of chores. Summer is almost here, then autumn. That will be half the year gone. We had better buckle down and get started.

Barrett A. Nelson, M.D.

Basic Science Act

Among the bills passed during the 1957 session of the Kansas legislature that are of significance to medicine is House Bill 281, the Basic Science Act. This will affect all future applicants for licenses to practice medicine and surgery, osteopathy, and chiropractic in this state. All essential parts of the act are printed below. Omissions are indicated and summarized.

"Be it enacted by the Legislature of the State of Kansas

"SECTION 1. *Exceptions to Operation of This Act.* Nothing in this act shall be interpreted to apply to any person who is licensed to practice the healing arts, or any branch thereof, in this state at the time this act shall take effect; nor to dentists, pharmacists, optometrists, nurses, barbers, cosmeticians, or Christian Scientists who practice within the limits of their respective callings; nor to persons specifically permitted by law to practice without licenses and who practice within the limits of the privileges given to them; nor to the sale, manufacture, or advertising of equipment, drugs, medicines, household remedies, and chemicals in the usual course of business as distinguished from the practice of the healing arts.

"SECTION 2. *Qualification for Examination; Basic Sciences Defined; State Board.* No person except as is specifically excepted herein, shall be permitted to take an examination for a license to practice the healing arts or any branch thereof, or be granted any such license, unless he has presented to the board or officer empowered to issue such a license as the applicant seeks, a certificate of proficiency in anatomy, physiology, chemistry, bacteriology and pathology (hereinafter referred to as the basic sciences) issued by the State Board of Basic Science Examiners (hereinafter referred to as the Board).

"SECTION 3. *Healing Arts Defined.* For the purposes of this act, the healing arts include any system, treatment, operation, diagnosis, prescription, or practice for the ascertainment, cure, relief, palliation, adjustment, or correction of any human disease, ailment, deformity, or injury and includes specifically but not by way of limitation the practice of medicine and surgery; the practice of osteopathy; and the practice of chiropractic.

"SECTION 4. *Fees: Disposition of Moneys. . . .*" The substance of Section 4 is that the examination fee is $10 and a certificate from another state $5.00.

"SECTION 5. *State Board of Basic Science Examiners; Appointments; Terms; Expenses.* The Governor, within 30 days after this act takes effect shall appoint a State Board of Basic Science Examiners consisting of five members, one to represent each of the five basic sciences. . . . Each member appointed

to the board shall hold a doctorate degree and at the time of his appointment be actively engaged within the field in which he will examine and shall be a member of the faculty of a state supported institution of higher learning in this state, of which no one school shall have over two members on the board. . . ."

"SECTION 6. *Examinations by State Board of Basic Science Examiners; Assistants; Compensation; Issuance of Certificates; Rules; Records.* The state board of basic science examiners shall conduct the examinations provided in this act. The board shall conduct such examinations at least twice a year at such times and places as it deems advisable. The board shall be empowered to issue basic science certificates to applicants who have complied with the provisions of this act, shall make such rules as it deems expedient to carry this act into effect and shall keep a record of all its proceedings which shall be prima facie evidence of all matters contained therein.

"SECTION 7. *Same; Examinations.* Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examinations shall be conducted in writing, and the questions and answers shall be preserved by the board for a period of five years and the same shall be available for examination by the applicant or his attorney or the Healing Arts Board, or shall be available for production in a court of record in any action to which the board is a party. The examinations shall be conducted by number without knowledge by the examiners in the grading of examinations as to the names, professions or schools of applicants. If the applicant receives a credit of 75 per cent or more in each of the basic sciences, he shall be considered as having passed the examination. If the applicant receives less than 75 per cent in one subject and receives 75 or more in each of the remaining subjects, he shall be allowed a reexamination at the examination next ensuing, on application and the payment of the prescribed fee, and he shall be required to be reexamined only in the subject in which he received a rating less than 75 per cent. If the applicant receives less than 75 per cent in more than one subject, he shall not be reexamined unless he presents proof, satisfactory to the board, of additional study in the basic sciences sufficient to justify the reexamination.

"SECTION 8. *Qualifications of Certificants.* No basic science certificate shall be issued by the board unless the person applying for it submits evidence, satisfactory to the board, (1) that he is a person of good moral character; (2) that before he began the study of the healing arts he was graduated by a high school accredited by the state board of education of Kansas or a school of similar grade, and (3) that he has a comprehensive knowledge of the basic sciences as shown by his passing the examination given by the board, as by this act required.

"SECTION 9. *Endorsement with Other States.* The board may in its discretion waive the examination required by Section 7, when proof satisfactory to the board is submitted showing (1) that the applicant has passed in another state an examination in the basic sciences before a board of examiners in the basic sciences; (2) that the requirements of that state are not less than those required by this act as a condition precedent to the issuance of a certificate.

"SECTION 10. *Void Certificates; Revocation or Cancellation.* Any basic science certificate and any license to practice the healing arts or any branch thereof, issued contrary to this act, is void. Any licensing board which has issued a license on the basis of a void basic science certificate shall revoke or cancel that license. The procedure for such revocation or cancellation shall be in accordance with the provisions of the act under which such license was issued.

"SECTION 11. *Penalties for Unlawful Acts. . . .*" This section provides for fines up to $300 or six months imprisonment for fraud in connection with obtaining a Basic Science certification.

"SECTION 12. *Appeal.* Any applicant who fails the examination in basic sciences may appeal in writing to the district court for a review. Should the court find support in the grievance of the plaintiff, the board may reexamine the applicant in the basic science subjects and if successful, the applicant shall then be issued a certificate by the Board of Basic Science Examiners.

"SECTION 13. *Short Title.* This act may be cited as The Basic Science Act.

"SECTION 14. *Saving Clause.* Nothing in this act shall be construed as repealing any statutory provision in force at the time of its passage with reference to the requirements governing the issue of licenses to practice the healing arts or any branch thereof or as in any way lessening such requirements. But any board authorized to issue licenses to practice the healing arts or any branch thereof may in its discretion either accept basic science certificates issued by the board in lieu of examining the certificates in such sciences or it may also examine the holders of such certificates in such sciences.

"SECTION 15. *Repeals. . . .*" This section repeals all previous acts related to this subject.

"SECTION 16. *Effective Date.* This act shall take effect and be in force from and after July 1, 1957, and its publication in the statute book."

In 1877 W. Morrant Baker reported "On the Formation of Synovial Cysts in the Leg in Connection with Disease of the Knee Joint"—the condition to become known as "Baker's cyst." Eight cases were described in some detail, each having some established disease of the joint before development of the cyst. There was a careful evaluation of observed facts, an expressed theory of the means of production, and a warning against operative interference because of the danger of infection. His conclusions summarize the observations:

"1. That in cases of effusion into the knee-joint, and especially in those in which the primary disease is osteo-arthritis, the fluid secreted may find its way out of the joint, and form by distension of neighbouring parts a synovial cyst of large or small size.

"2. That the synovial cyst so produced may occupy (a) the popliteal space and upper part of the calf of the leg, or may (b) be evident in the calf of the leg only, projecting most, as a rule, on the inner aspect of the leg as a small defined swelling, not approaching within three or four inches of any part of the knee-joint.

"3. That however large the synovial cyst may be, fluctuation may not be communicable from it to the interior of the knee-joint; but the absence of such fluctuation must not be taken to contraindicate the existence of a connection between the joint and the cyst.

"4. That the synovial cyst may be expected to disappear after a longer or a shorter period, without leaving traces of its existence, even on dissection of the limb.

"5. That the cyst should not be punctured or otherwise subjected to operation, unless there appear strong reasons for so doing, inasmuch as interference may lead to acute inflammation and suppuration of the knee-joint.

"6. That most often the disease in the knee-joint will be found to have begun some time before the appearance of the secondary synovial cyst; but sometimes the patient's attention may be first drawn to the latter, or the cyst may seem for a long period the more important part of the disease."

In 1885 he published a second paper, this time dealing with the same pathological process, but as he had observed it near the shoulder, elbow, wrist, hip, and ankle. The explanation offered for the formation of these synovial cysts was ". . . that the synovial fluid on reaching a certain amount of tension by accumulation within the joint, finds its way out in the direction of least resistance, either by the channel by which some normal bursa communicates with the joint, or, in the absence of any such channel, by forming first a hernia of the synovial membrane. In both cases, should the tension continue or increase, the fluid at length escapes from the sac, and its boundaries are then formed only by the muscles and other tissues between and amongst which it accumulates.

". . . the caution given in the previous communication, not to interfere by operation with these synovial sacs without good reason, has been justified by increased experience."

The control of infection during operative procedures has, of course, completely changed our concept of the treatment of these lesions, and today they are, quite properly, excised when large enough to cause symptoms. Aside from this one change it is rather interesting to realize that we know little more about these lesions now than did Baker himself—in fact some which are at a distance from the joint are not recognized as Baker's cysts even though they do fit his original description, but are considered to be some new discovery. How many of our "new" discoveries were described many years ago? The old masters were careful observers and noticed many clinical facts which today we are apt to overlook, in our haste to get blood chemistry examinations and x-ray studies. Our own senses are still useful—if used.—*O.R.C.*

Tumor Conference

Neoplasia of the Lung in Women

Edited by PETER RASMUSSEN, M.D.

Dr. Stowell: In our concern that cancer of the lung is rapidly becoming the major tumor in men, we tend to neglect consideration of malignant and benign bronchial tumors in women. These two cases will illustrate some aspects of these problems. Dr. Delp, what is the history on this first patient?

Case I

Dr. Delp: This 37-year-old white woman's difficulty began with a cold a year ago, followed by pneumonia seven months ago. About five months ago she had severe pain in her right shoulder; this was not accentuated by respiration. She withstood the pain until one month ago, when, in addition, she began to get shortness of breath, swelling of her arms, and then rapid swelling of her neck and face. During hospitalization elsewhere, roentgenograms of the chest were taken and she had some intravenous medication which in a matter of five or six days improved her breathing and the swelling in her arms. She was then referred here. By this time the major portion of the swelling had disappeared, but over the chest she had a conspicuous network of dilated superficial veins. She has been a heavy smoker for 18 years.

Dr. Goertz: Roentgenograms of her chest from her previous hospitalization show a 2.5 x 2.5 cm. mass which extends laterally from the hilus of her right lung. There is a haziness on the right side, which obliterates the cardiac margin, indicating that the mass is anterior; and further, that it is present in the middle lobe. Our roentgenograms demonstrate a much smaller amount of opacity higher up on the right of the mediastinum. Fluoroscopically, she had paradoxical breathing caused presumably by a paralyzed right diaphragm. The x-ray diagnosis is primary bronchial neoplasm.

Dr. Delp: We felt, from the signs and symptoms described to us and the residual mass seen, that this patient had a classical superior vena cava syndrome. Our next problem was to decide upon the etiology of the venous obstruction. No superficial lymph nodes were palpable; so she was bronchoscoped and subsequently had a thoracotomy.

Dr. Stowell: Dr. Proud, what did you see at bronchoscopy?

Dr. Proud: The carina was swollen and red. It was at least three to four times thicker than normal and instead of being in the customary 12:00 to 6:00 o'clock plane, it was rotated into the 10:00 to 4:00 o'clock plane. The right main stem bronchus, just inferior to the carina, showed compression from the anteromedial aspect into the lumen, so that it was impossible to pass a small bronchoscope beyond this point. Therefore, upper, middle, and lower lobe bronchi were not adequately examined. To determine the extent, type, and operability of the lesion, I made an attempt to biopsy it through the bronchial wall, but I was unable to do so. Because of this considerable bronchial compression and distortion, I thought the lesion was probably inoperable.

Dr. Delp: We felt that a histologic diagnosis was needed because this young woman is intelligent and has been apprised of the hopelessness of her situation even without definite diagnosis. Apart from this, however, was the possibility that something might be done at the time the diagnosis was established. For these reasons we advised thoracotomy.

Dr. Stowell: Dr. Allbritten, would you care to comment on what was seen during operation?

Dr. Allbritten: This is an interesting problem because of a relatively young lady with clinical findings compatible with bronchogenic carcinoma. Our surgical intent was that, in addition to diagnosis, perhaps palliative removal of tissues could be accomplished. However, at operation a solid, mediastinal mass which extended into the substance of the hilus of the right lung was found. The lower and upper lobes were inseparable in this area. There was total atelectasis of the middle lobe and all of the lower lobe except the lateral-basal segment, which still contained air. The air-bearing lung was composed almost entirely of over-expanded upper lobe. The phrenic nerve was involved by tumor, and tumor encased the superior vena cava and the azygos vein at its arch, so that there was no blood returned by way of the major azygos vein. This means that blood

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and the Kansas Division of the American Cancer Society. Dr. Rasmussen is a trainee of the National Cancer Institute.

had to return to the heart via the inferior vena cava, explaining the extensive collateral circulation over the chest wall.

Had we been able to ligate her right pulmonary artery, we might have given her some palliation from her dyspnea; however, this was impossible because it was solidly encased in tumor tissue. Only biopsy of the mediastinal mass was performed to establish diagnosis.

Dr. Helwig: The biopsy specimen is a mediastinal lymph node (Figure 1). There are small nests of cancer cells embedded in a desmoplastic stroma. It is an anaplastic squamous cell carcinoma, probably primary in the bronchus. However, I cannot completely rule out an adenocarcinoma of highly undifferentiated character.

Dr. Stowell: What is planned for this patient in the future?

Dr. Delp: The roentgenograms taken at her prior hospitalization show that the mass was considerably larger. This makes me think her medication, presumably nitrogen mustard, actually palliated her disease just prior to coming here. I suppose that this might lead us to think that a combination of radiation and nitrogen mustard might offer some palliation in the future.

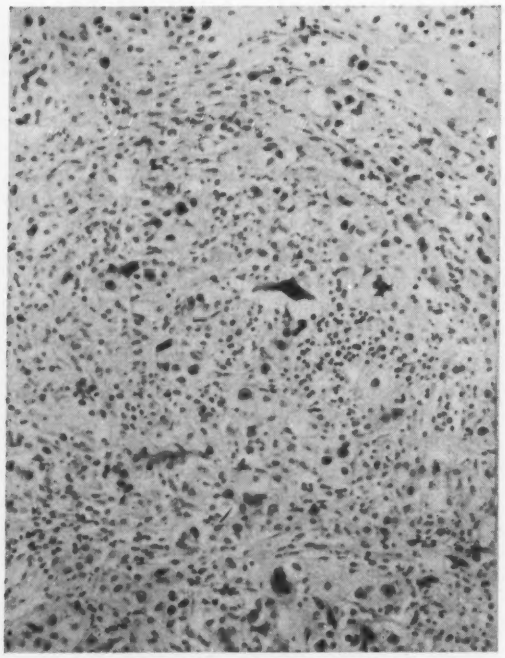


Figure 1. Photomicrograph of the mediastinal lymph node removed at thoracotomy in Case I. The anaplasia of tumor cells is evident. No normal lymph node is seen here. Hematoxylin and eosin stain. 125X.

Dr. Stowell: The case is unusual in that it involves a young woman, with probable anaplastic carcinoma of the lung.

Mr. Androes, please tell us about the next case.

Case II

Mr. Androes (medical student): This is the first admission for this 49-year-old white woman who was referred here because of productive cough of eight months' duration. She denies hemoptysis. She has lost 40 pounds in the past year. The important physical findings on admission were an area of dullness and absent breath sounds over the posterior thorax of the right side. She has positive histoplasmin and tuberculin skin tests.

Dr. Stowell: What do the roentgenograms of the chest show?

Dr. Gomm: There is an opacity in the base of the right lung which can be differentiated from the right heart border (Figure 2). This would indicate in the postero-anterior projection that this density is posterior. There is no hilar enlargement but there is depression of the interlobar fissure, and in the lateral projection the opacity is in the retrocardiac area. Radiologically, this means collapse of the right lower lobe and also possibly of the right middle lobe. We cannot make a definite radiological diagnosis.

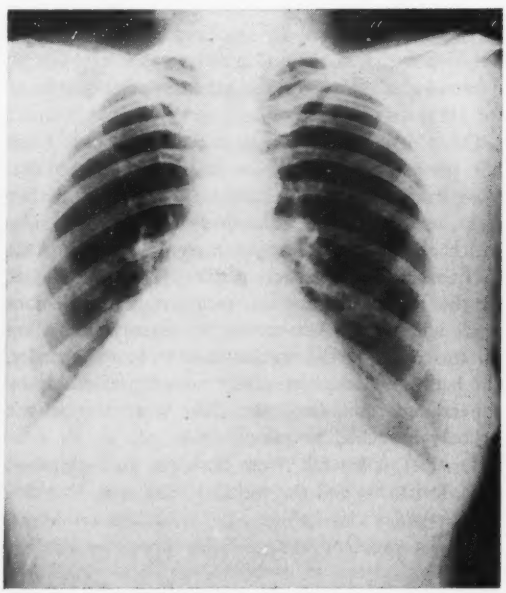


Figure 2. X-ray of the chest of the patient with bronchial adenoma. Note the atelectasis of the lower lobe of the right lung caused by obstruction of the corresponding bronchus.

Dr. Stowell: Dr. Bridwell, can you tell us the findings at bronchoscopy?

Dr. Bridwell: I saw a round, pinkish mass almost occluding the right main bronchus. It was pedunculated and appeared to be encapsulated; it did not appear to invade the bronchial wall. Biopsy was taken, attended by fairly brisk hemorrhage controlled by immediate suction.

Dr. Boley: The fragment of tissue obtained by biopsy is covered by metaplastic squamous epithelium which is thinned out, and beneath it is tumor with considerable hemorrhage in the submucosa. In areas where there is little trauma associated with the biopsy, we find that blood vessels are surrounded by tumor cells. At higher power, the cells are uniform and arranged in cords and nests. The diagnosis is bronchial adenoma, carcinoid type.

Dr. Stowell: Dr. Friesen, what did you do at operation?

Dr. Friesen: We removed the middle and lower lobes of the right lung, since the adenoma was obstructing the bronchi of these lobes. Postoperatively, she is doing well.

Dr. Boley: The surgical specimen does show gross "mushrooming" into adjacent parenchyma beneath the occluded bronchus. Microscopically, there is local invasion.

Dr. Friesen: It is uncommon to find a patient with a bronchial adenoma. We see perhaps two or three a year in this hospital. They are slightly more common in women than in men. In fact, with any obstruction to the bronchus in a female, if a foreign body is ruled out, one should seriously consider an adenoma as well as a carcinoma; whereas, in a man, of course, the odds are in favor of carcinoma. The symptoms are usually those of hemoptysis, which differs from that in other pulmonary diseases. For example, with bronchiectasis, middle lobe syndrome, or carcinoma, the hemoptysis is mixed with purulent material and mucus; but in these patients it is usually described as a clear hemoptysis, that is pure blood, with little mucus or pus. Often adenomas of the bronchus will be "iceberg" tumors, that is with much more tumor mass spreading out beneath the bronchus into adjacent lung than is evident at bronchoscopy (Figure 3). Consequently, they cannot usually be removed bronchoscopically, because considerable tumor would be left in the patient's lung. This is not always the case, but this is frequent enough that I believe most physicians now are not advocating bronchoscopic removal of bronchial adenomas; it usually necessitates a lobectomy. A few patients have been operated upon where the bronchus has been opened, the tumor has been removed, and the lobe has been saved.[1]

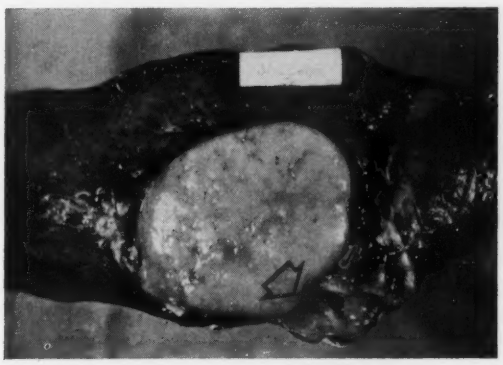


Figure 3. Gross photograph from another case of a bronchial adenoma. The specimen is an atelectatic lower lobe of lung. The origin of the tumor from the proximal portion of the lower lobe bronchus is indicated by the arrow. The main growth of the tumor is into the adjacent lung parenchyma. This is an "iceberg tumor."

We are interested in this patient because her history is one of no hemoptysis, and, although she did bleed after her bronchoscopic biopsy it was not profuse and did not persist.

Dr. Bridwell: Bronchoscopically, by its pink color, I recognized this as an adenoma, since they are so vascular. Most carcinomas are white or grey.

Dr. Stowell: I have seen a few cases of adenomas in which one area was quite benign while malignant transformation was taking part in the base or in some other area; a few have metastasized.

Dr. Helwig: I want to reemphasize that in the days when chest surgery was not done regularly, adenomas were removed bronchoscopically. I know of three or four patients I followed over a period of years, and the growths all subsequently became true carcinoma of the lung. If you do not get the whole tumor, you certainly run the risk of subsequent malignant transformation.

Dr. Stowell: These two cases point up (1) the increasing occurrence of bronchogenic carcinoma in women in addition to men[2] and (2) the comparison of carcinoma to bronchial adenoma which is a more common lesion in women than men and much more successfully treated surgically than carcinoma.

References

1. Paulson, D. L., and Shaw, R. R.: Bronchial anastomosis and bronchoplastic procedures in the interest of preservation of lung tissue, J. Thor. Surg. 29:238-259 (Mar.) 1955.

2. Dorn, H. F.: The increase in cancer of the lung, Indust. M. and Surg. 23:253-257 (June) 1954.

for
the first
time

24 HOUR SULFA THERAPY

A single dose of KYNEX provides therapeutic blood levels within the hour. Blood concentration peaks are reached within 2 hours—10 mg. per cent blood levels persist beyond 24 hours.[1]

For greater safety: low dosage, high solubility and slow excretion help avoid crystalluria. **For broad antibacterial effectiveness:** KYNEX is particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including E. coli, Aerobacter aerogenes, paracolon bacilli, streptococci, staphylococci, Gram-negative rods, diphtheroids and Gram-

WITH A SINGLE (1 Gm.) DOSE

positive cocci. **For convenience:** the low dosage of 1 Gm. (2 tablets) per day offers optimum convenience and acceptance to patients.

Tablets: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100 Tablets.

Syrup: Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxypyridazine. Bottle of 4 fl. oz.

1. Boger, W. P.; Strickland, C. S.; and Gylfe, J. M.: Antibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

KYNEX*

SULFAMETHOXYPYRIDAZINE LEDERLE

*Reg. U. S. Pat. Off.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

Lederle

Annual Meeting

Reports of Officers Elected for the Society, Specialty Groups, and Affiliated Organizations

Listed below are the officers of the Kansas Medical Society elected by the House of Delegates at the annual session at Wichita on May 9. A complete report of the two meetings of the House of Delegates will be published later.

Brief résumés of meetings of other groups of interest to Society members are also included.

Officers for 1957-1958

President ..... Dr. Barrett A. Nelson, Manhattan
President-Elect ..... Dr. Thomas P. Butcher, Emporia
Immediate Past President .. Dr. Clyde W. Miller, Wichita
First Vice-President .... Dr. Glenn R. Peters, Kansas City
Second Vice-President
..... Dr. Frederick E. Wrightman, Sabetha
Constitutional Secretary
..... Dr. George E. Burket, Jr., Kingman
Treasurer ..... Dr. John L. Lattimore, Topeka
A.M.A. Delegate, 1957-1958 .. Dr. Lucien R. Pyle, Topeka
A.M.A. Delegate, 1958-1959
..... Dr. George F. Gsell, Wichita
A.M.A. Alternate, 1957-1958
..... Dr. Norton L. Francis, Wichita
A.M.A. Alternate, 1958-1959 .. Dr. Cyril V. Black, Pratt
Chairman of Editorial Board . Dr. Orville R. Clark, Topeka

Councilors for 1957-1958

1. Dr. Emerson Yoder, Denton, term expiring in 1960
2. Dr. Joseph W. Manley, Kansas City, 1958
3. Dr. George R. Maser, Mission, 1960
4. Dr. Charles E. Vestle, Humboldt, 1958
5. Dr. Ralph G. Ball, Manhattan, 1960
6. Dr. James A. McClure, Topeka, 1959
7. Dr. Edward J. Ryan, Emporia, 1959
8. Dr. James E. Hill, Arkansas City, 1960
9. Dr. L. S. Nelson, Jr., Salina, 1960
10. Dr. Harold M. Glover, Newton, 1959
11. Dr. Norton L. Francis, Wichita, 1958
12. Dr. Albert C. Hatcher, Wellington, 1959
13. Dr. Lloyd W. Reynolds, Hays, 1958
14. Dr. Justin A. Blount, Larned, 1958
15. Dr. Lyle G. Glenn, Protection, 1958
16. Dr. James L. Jenson, Colby, 1959
17. Dr. H. Preston Palmer, Scott City, 1960.

Blue Shield

Dr. Francis T. Collins, Topeka, was re-elected president of Kansas Blue Shield at the annual meeting of the Board of Directors held at the Allis Hotel in Wichita, May 5.

Other officers are Dr. James B. Fisher, Wichita, first vice-president; Dr. E. Burke Scagnelli, Dodge City, secretary-treasurer, and Dr. Edward J. Ryan, Emporia, second vice-president. Dr. L. W. Reynolds, Hays, is past president of Blue Shield and will serve on the board's Executive Committee.

New members elected or re-elected to the board this year are Dr. H. J. Brown, Winfield, District 8; Dr. James L. McGovern, Wellington, District 12; Dr. Robert K. Purves, Wichita, District 11; Dr. Floyd Smith, Colby, District 16, and Dr. A. E. Titus, Cottonwood Falls, District 7.

Other members of the board and the districts from which they were elected are Dr. E. T. Wulff, Atchison, District 1; Dr. P. E. Hiebert, Kansas City, District 2; Dr. Monti L. Belot, Lawrence, District 3; Dr. F. X. Lenski, Jr., Iola, District 4; Dr. Robert M. Carr, Junction City, District 5; Dr. Lucien R. Pyle, Topeka, District 6; Dr. H. S. Dreher, Sr., Salina, District 9; Dr. H. M. Glover, Newton, District 10; Dr. A. M. Cherner, Hays, District 13; Dr. S. T. Coughlin, Larned, District 14, and Dr. G. R. Hastings, Garden City, District 17.

Dr. Barrett A. Nelson, new president of the Kansas Medical Society, and Dr. Thomas P. Butcher, Emporia, the medical society's president-elect, are automatically members of the Blue Shield board by virtue of their offices.

Two lay members are appointed by the Governor of Kansas to the Blue Shield Board of Directors. Present appointees are John Junior Armstrong, Muscotah, and B. L. Humphreys, Hutchinson.

Other member representatives on the Blue Shield board are J. D. Smerchek, Manhattan; H. P. Reynolds, Moline; Russell Mosser, Lawrence, and Joe Reilly, Pittsburg.

Nominating Committee

Five past presidents of the Society form the committee which will nominate officers for the 1958-1959 year. Dr. Murray C. Eddy, Hays, will serve as chairman, and additional committee members are Dr. Conrad M. Barnes, Seneca; Dr. Clarence H. Benage, Pittsburg; Dr. Oscar W. Davidson, Kansas City, and Dr. L. S. Nelson, Sr., Salina.

Editorial Board

The Council of the Society, at a meeting held at Wichita on May 9, reappointed Dr. Orville R. Clark, Topeka, as chairman of the Editorial Board and editor of the JOURNAL. Serving with him on the Editorial Board, and the dates on which their terms will expire are: Dr. David E. Gray, 1960; Dr. Richard Greer, 1958; Dr. Dwight Lawson, 1960; Dr. John A. Segerson, 1959. All are Topeka physicians. Serv-

ing as associate editors are Dr. Donald P. Trees, Wichita, and Dr. Vernon E. Wilson, Kansas City.

Eye, Ear, Nose, and Throat Section

At a business session of members of the Eye, Ear, Nose, and Throat Section of the Kansas Medical Society, held in Wichita on May 7, it was decided that the 1958 meeting of the Society should include a one-day program on Tuesday with papers to be presented by eye, ear, nose, and throat specialists of Kansas. Dr. Max S. Lake, Salina, was named president of the group, Dr. Victor R. Moorman, Hutchinson, was elected vice-president, and Dr. Glen Floyd, Winfield, was chosen to serve as secretary.

Kansas Chapter, American Academy of General Practice

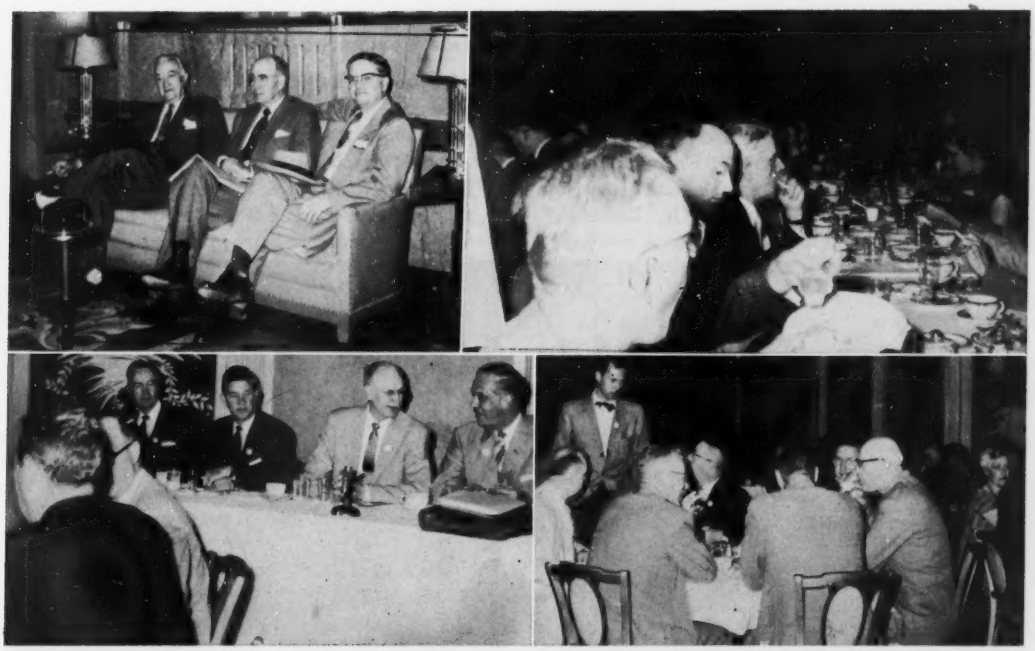
Dr. Bruce P. Meeker, Wichita, took office as president of the Kansas Chapter, American Academy of General Practice, at the close of the organization's annual meeting in Wichita on May 6. Other officers elected are: president-elect, Dr. Henry B. Sullivan, Shawnee; vice-president, Dr. Cloyce A. Newman, Topeka; secretary-treasurer, Dr. J. Allen Howell, Wellington; delegate to national meetings, Dr. Clyde W. Miller, Wichita; alternate, Dr. Lawrence E. Leigh, Overland Park.

Kansas Society of Anesthesiology

Dr. Dale U. Loyd, Wichita, was elected president of the Kansas Society of Anesthesiology at a meeting held at Wichita on May 7. Other officers are: vice-president, Dr. Harold F. Spencer, Emporia; secretary, Dr. William F. Powers, Wichita; treasurer, Dr. J. E. Gootee, Topeka; delegate to American Society of Anesthesiology, Dr. Paul H. Lorhan, Kansas City; alternate, Dr. Floyd C. Taggart, Topeka.

Kansas Obstetrical Society

Dr. Charles Don Shrader, Newton, took office as president of the Kansas Obstetrical Society at a meeting held in Wichita on May 7. Other officers are: Dr. Edward X. Crowley, Wichita, president-elect; Dr. Robert Sohlberg, Jr., McPherson, vice-president,



At upper left above, Dr. Frederick E. Wrightman, Sabetha, visits between sessions of the annual meeting with Dr. Haddon Peck, St. Francis, and Dr. Cecil C. Hunnicutt, Sabetha.

Pictured at right above is part of the crowd of more than 400 physicians and pharmacists who filled the ballroom at the Broadview Hotel for a dinner sponsored by the Kansas Medical Society Committee on Allied Groups.

Some of the officers of the Society are pictured above, at left, just before a meeting of the House of Delegates. Seated from left to right are: Dr. Thomas P. Butcher, Emporia; Dr. George E. Burket, Jr., Kingman; Dr. Barrett A. Nelson, Manhattan, and Dr. Clyde W. Miller, Wichita.

At lower right are some of the delegates and alternates who reported early Tuesday morning during the meeting for a breakfast preceding the first session of the House of Delegates.

and Dr. Henry M. Foster, Hays, secretary-treasurer. The immediate past president each year will represent the society at meetings of the House of Delegates of the Kansas Medical Society.

The organization will prepare case reports on selected maternal deaths for publication each month in the JOURNAL.

Kansas Orthopaedic Club

The following officers of the Kansas Orthopaedic Club were elected at a meeting held on May 7: president, Dr. Clarence L. Francisco, Kansas City; secretary-treasurer, Dr. Henry O. Marsh, Wichita. The group voted to contribute $50 to the James B. Weaver Memorial Fund at the University of Kansas School of Medicine when the fund is established.

A scientific program was presented. Dr. Octavio Pliego, senior resident at St. Francis Hospital, Wichita, presented a report of a case of lymphoma of the spine with paraplegia and long term follow-up. Dr. Ward C. McClanahan, Wichita, described a patient with non-specific infection of the spine with recovery following extensive spinal fusion. Dr. John A. Grove, Newton, reported on a series of interesting fracture cases.

Kansas Society of Pathologists

A meeting of the Kansas Society of Pathologists was held at Wichita on May 7. Dr. Chauncey G. Bly, of the University of Kansas Medical Center, was elected president of the group, Dr. Richard F. Looker of St. Francis Hospital, Wichita, was named vice-president, and Dr. William J. Reals of St. Joseph Hospital, Wichita, was chosen to serve as secretary-treasurer.

Kansas District Branch of American Psychiatric Association

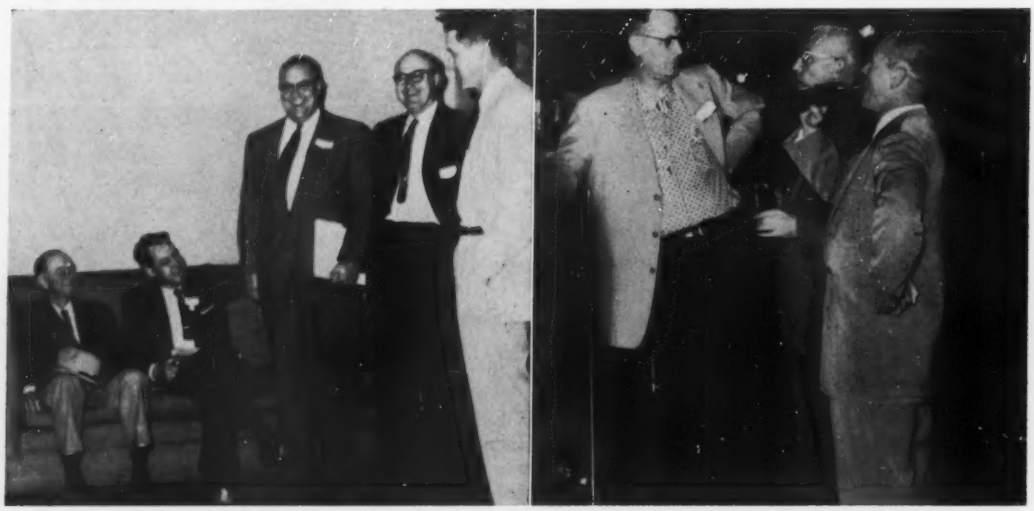
Dr. Austin J. Adams took office as president of the Kansas District Branch of the American Psychiatric Association at a meeting of the group held at Wichita during the annual session of the Kansas Medical Society. He succeeded Dr. Thomas L. Foster, Halstead, who had served as president since last November when the branch of the national organization was formed to replace the Kansas Psychiatric Society. Dr. Frank H. Harris, Wichita, was elected secretary-treasurer. Serving as directors are Dr. Foster, Dr. Alfred P. Bay, Topeka; Dr. Paul E. Feldman, Topeka, and Dr. Howard V. Bair, Parsons.

During a scientific session at the Wichita meeting four round table discussions were presented.

The next meeting of the group will be held in November.

Kansas Urological Society

Dr. Oscar W. Davidson, Kansas City, was elected president of the Kansas Urological Society at a meeting held on May 7. Dr. Ronald W. Stitt, Kansas City, was named secretary-treasurer. Dr. H. F. O'Donnell, Wichita, will represent the organization on the Blue Shield Fee Schedule Committee.



Mr. Kirke W. Dale, Arkansas City, attorney for the Society, seated at left in the picture at the left, visits with Dr. Norton L. Francis, Wichita, also seated, Dr. Robert W. Myers of Newton, and Dr. John C. Mitchell and Dr. L. S. Nelson, Jr., of Salina.

Relaxing between scientific sessions at the Forum, in the picture above at the right, are Dr. Orville R. Clark, Topeka, at left, Dr. Murray C. Eddy, Hays, and Dr. A. L. Ashmore, Wichita.

Kansas Medical Assistants' Society

The 17th annual session of the Kansas Medical Assistants' Society was held at Wichita on May 4 and 5 with more than 300 members attending. Hope Finley, Hutchinson, took office as president of the organization for the coming year, and the following were elected to serve with her: president-elect, Edna Crosson, Lyons; vice-president, Ruth Sieverling, Wichita; secretary, Marjorie Slaymaker, Newton; treasurer, Virginia Brand, Lawrence; corresponding secretary, Mary Britain, Hutchinson.

Chosen to represent the Kansas society at the national meeting, to be held in San Francisco in October, are Hope Finley, Edna Crosson, Marjorie Slaymaker, and Pauline Keller of Topeka.

Woman's Auxiliary to Kansas Medical Society

Members of the Woman's Auxiliary to the Kansas Medical Society, in annual session at Wichita on May 8, accepted recommendations of their Nominating Committee in the selection of new officers. Mrs. Louis Cohen, who had served as president-elect during the past year, took office as president. Others elected are: president-elect, Mrs. R. T. Unruh, Kinsley; first vice-president, Mrs. Louis G. Graves, St. John; second vice-president, Mrs. Chester L. Young, Kansas City; third vice-president, Mrs. William K. Walker, Sedan; recording secretary, Mrs. Edward D. Greenwood, Topeka; treasurer, Mrs. William T. Braun, Pittsburg. A new office was created, that of fourth vice-president, and Mrs. Thomas P. Butcher, Emporia, was named to serve in that capacity.

Sports Events

One hundred twenty-one physicians played golf and 18 enjoyed competitive shooting at Wichita clubs on May 6 when the annual meeting of the Kansas Medical Golf and Trapshooting Association was held. A tournament banquet, attended by 178 persons, was held that evening at the Crestview Country Club, followed by a short business session and the awarding of prizes contributed by friends of the medical profession.

Dr. Jack Coyle, Coffeyville, was named president of the organization. Dr. E. W. Mitts of Bonner Springs is golf vice-president, Dr. George Gill of Sterling is trap vice-president, and Dr. Fred Ford, Topeka, is secretary-treasurer.

Dr. E. E. Harvey and Dr. Fred Bosilevac tied for first place in the golf tournament. Other winners in the championship flight were: Doctors Millard Hall, A. W. Bradford, Ed Ashley, J. F. Coyle, E. S. Edgerton, H. O. Anderson, Jim Shaw, and H. P. Jones.

The winner of the first flight was Dr. George Gsell. Others who received prizes in that flight were: Doctors C. A. Isaac, W. D. Pitman, Jack Ashmore, W. T. Braun, L. E. Woodward, J. M. Stout, F. L. Ford, J. L. McGovern, and M. B. Knapp.

Dr. M. F. Frederick was winner in the second flight, followed by Doctors Stanley VanderVelde, F. E. Wrightman, E. W. Mitts, E. W. Christmann, J. S. Menaker, W. J. Kiser, T. T. Taylor, E. N. McCusker, and G. Q. Street.

In the third flight Dr. M. J. Cox was winner, and additional prizes were won by Doctors C. V. Minnick, W. G. Chappuie, G. J. Millett, M. H. Hird, R. T. Parmley, L. S. Roberts, Robert Sohlberg, Glen Floyd, and J. E. Moseley.

The low score in the fourth flight was held by Dr. W. C. Goodpasture. Next in scoring were: Doctors G. F. Jordan, J. A. Blount, D. R. Wall, N. S. Smith, M. W. Sumner, G. L. Norris, F. Law, R. C. Tout, and Floyd Grillott.

Dr. J. H. McNickle was winner of the trapshoot. Dr. W. A. Smiley was second, followed by Dr. A. H. Baum, Dr. M. C. Eddy, and Dr. F. F. Nyberg.

First prize in the skeet shoot was won by Dr. G. L. Gill. Dr. E. S. Brinton and Dr. J. G. Phipps also received awards.

The prizes awarded were donated by the following: Quinton-Duffens Optical Company; Munns Med-

Pictured above is a section of the speakers' table at the annual banquet. From left to right are: Mrs. Clyde W. Miller, Wichita; Dr. and Mrs. Barrett A. Nelson, Manhattan, and Dr. Thomas P. Butcher, Emporia.

Medical assistants crowded the hall to hear Dr. Edward X. Crowley, Wichita, pictured in the foreground with Edna Crosson, Lyons, president of the Kansas Medical Assistants' Society.

ical Supply Company; Ciba Pharmaceutical Products, Inc.; Ethicon, Inc.; Goetze Niemer Company; Ames Company; Ortho Pharmaceuticals Corporation; Ross Laboratories; A. H. Robins Company; Abbott Laboratories; Upjohn Company; American Optical Company; Coe Surgical Supply Company; Hoffmann-La Roche; Archer Pharmacies; W. B. Saunders Company; Reed and Carnick; Eaton Laboratories; Carroll Dunham Smith Pharmacal Company; John C. Breck, Inc.; Wyeth, Inc.; Sandoz Pharmaceuticals; Smith, Kline and French Laboratories; Merck, Sharp and Dohme, Inc.; U. S. Vitamin Corporation; Armour Laboratories; Charles C Thomas, Publisher; Marcelle Cosmetics; White Laboratories; A. S. Aloe Company; Mead Johnson and Company; George Breon and Company; William P. Poythress and Company, Inc.; Burroughs Wellcome and Company; Mid-West Surgical Supply Company; Eli Lilly and Company; Schering Corporation.

Board of Health Appointments

Governor George Docking recently announced the appointment of four new members of the Kansas State Board of Health, Dr. Theodore E. Young, Winfield, and Dr. Richard O. Nelson, Lawrence, physicians; Dr. A. A. Herman, Hays, dentist, and Mr. Walter E. Fraese, pharmacist. Remaining on the board from previous appointments are Dr. L. E. Peckenschneider, Halstead, Dr. Ivan W. Cain, Kansas City, and Dr. Lyle G. Glenn, Protection, physicians; Dr. Fred B. Ogilvie, Kansas City, veterinarian, and Mr. D. C. Wesche, Manhattan, engineer.

Medical Services

(Continued from Page 364)

haps this is due to the increment of young physicians, graduating from the University of Kansas School of Medicine, who stay in the state to practice medicine. Since no attempt was made in this survey to study the quality of medical service, no association between age and quality of medical service can be shown.

The percentage of Kansas physicians designated as specialists is 40.5. These are predominantly in the large cities. Some attempt might be instituted to make their services, on a consultation or circuit basis, more widely available throughout the state.

The variation in distribution of physicians in Kansas is by no means a permanent one. The distribution is far from being static. Each month there is a considerable change in the location of physicians in the state, due to various factors already mentioned. However, it is expected that this survey will provide a base line or point of reference for future studies of the distribution of physicians and their services in Kansas.

University of Kansas Medical Center
39th and Rainbow
Kansas City 12, Kansas

Intoxication with Thiocyanate

(Continued from Page 367)

use of cyanide antidotes, such as methylene blue and sodium thiosulfate, could be useful, but there are no reports of their employment for this purpose.

602 North Sixth Street
Garden City, Kansas

Bibliography

1. Goodman, Louis, and Gilman, Alfred: The Pharmacological Basis of Therapeutics, New York City, The Macmillan Co., 1941, pages 573-574.
2. Sollman, Torald: A Manual of Pharmacology, Philadelphia, W. B. Saunders Co., 1948, pages 840-842.
3. Domazalski, C. A.; Kolb, L. C., and Hines, E. A.: Delirious reaction secondary to thiocyanate therapy of hypertension, Proc. Staff Meeting Mayo Clinic 28:272, 1953.
4. Saint-Pierre, Hubert; Corcoran, A. C.; Taylor, R. D., and Dustan, H. P.: Relief of hypertensive headache by intravenous injection of thiocyanate, J.A.M.A. 152:943, 1953.
5. Burnett, H. J. M.; Jackson, M. V., and Spaulding, W. B.: Thiocyanate psychosis, J.A.M.A. 147:1534, 1951.
6. Hardy, H. L.; Jeffries, W. M.; Wasserman, M. M., and Waddell, W. R.: Thiocyanate effect following industrial cyanide exposure, New Eng. J. Med. 242:968, 1956.
7. Wald, M. H.; Lindberg, H. A., and Barker, M. H.: Toxic manifestations of thiocyanates, J.A.M.A. 112:1120, 1939.
8. Garvin, C. F.: Fatal toxic manifestations of thiocyanates, J.A.M.A. 112:1125, 1939.
9. Rawson, R. W.; Hertz, S., and Means, J. H.; Thiocyanate goiter in man, Ann. Int. Med. 19829, 1943.
10. De Re Medica, Indianapolis, The Eli Lilly Co., Publishers, 1951, pages 512-513.

Physicians contributed well over three million dollars to medical education in 1956. A report recently issued by the American Medical Education Foundation shows that 84,657 doctors gave $3,320,152 to the country's 83 schools. This includes $1,072,727 contributed directly to the medical schools.

A chronic disease or condition may be defined as one which lasts a long time or at least too long and which, while it is present, prevents the individual from operating at his optimum efficiency. The cause may be a disease, as in the case of poliomyelitis, tuberculosis or syphilis of the central nervous system. It may be a physical or mental injury or dysfunction as in the case of cerebral palsy, an accidental amputation, mental retardation, or excessive exposure to radiation.—*Daniel Bergsma, M.D., New Jersey Pub. Health News, April, 1955.*

Auxiliary Activities

Editor's Note. The following report of activities of the Woman's Auxiliary to the Kansas Medical Society was prepared by Mrs. William J. Biermann, Wichita, who served as president of the organization during the past year. The report was presented to the House of Delegates on May 7 and is being published here in accordance with a request of the House.

The Woman's Auxiliary to the Kansas Medical Society has completed its 32nd year. Inspired by the theme of the national president, "Health Is Our Greatest Heritage," and realizing the importance of continuity in program, earnest and intense efforts were made to continue the established objectives of the Auxiliary and to incorporate new ones as suggested by our parent organization. It is with a deep feeling of gratitude to the Board of Directors and to each Auxiliary member of Kansas that I present this report for the year.

American Medical Education Foundation. The importance of continued financial support of our medical schools was stressed throughout the year. A total of $643 represents contributions received by April from 20 county auxiliaries, including Memorial and In Appreciation gifts. Nine auxiliaries responded to the president's request for a donation to the Foundation instead of giving her a corsage (the usual courtesy) when she visited each auxiliary. One large auxiliary, which yearly raises money for this project by a buffet supper dance, contributed $640 directly to the University of Kansas due to inability to secure admissions tax exemption. Total contributions to medical education, April 1—$1,283. At the annual meeting, A.M.E.F. corsages made by the chairman will be sold at the banquet.

Today's Health. The promotion of this excellent magazine continues to hold the spotlight in Auxiliary work. Only four auxiliaries do not have *Today's Health* chairmen, and two of these are new auxiliaries in which learning to know each member took precedence over other objectives. PTA, church, and Scout groups helped to promote the sale in several counties. To stimulate interest among its members, one county had the chairman review an article from the magazine at each meeting. The April *Tips 'N Topics* showed Kansas in first place in Group II (membership from 1,001 to 2,000) in the contest with 224 per cent of its quota. Two county auxiliaries had over 500 per cent (Greenwood-Woodson County, 1,044 per cent); six auxiliaries over 200 per cent; and ten county groups had 100 per cent or more of their quota.

Films and Material from the A.M.A. "Put your Auxiliary on exhibit" was the theme of our Exhibits chairman, who encouraged each county to make use of exhibits, films, and other material available from the A.M.A. At the fall conference, the mechanical exhibit on home accidents was displayed; the film "Defense Against Invasion" was shown; and a catalog of motion picture films cleared for TV was distributed to all county presidents. One Auxiliary showed on TV the film "Danger at the Source" during Medical Education Week; and, at another time, the film, "Even for One."

National Bulletin. Because good public relations and accurate information go hand in hand, special emphasis was placed upon the value of the *Bulletin* for EVERY member of the Auxiliary. The state president distributed the pink *Bulletin* envelopes for expediency during her visits to county groups. We are pleased that our total number of subscriptions is 185, a substantial increase.

State Medical Association. The Auxiliary enjoys a friendly working relationship with the state medical society. Much help was given by individual members of the society, the executive secretary and his staff, and the Committee on Auxiliary. The state society pays for the printing and mailing of our monthly

Members of the Auxiliary, in the pictures above, enjoy a coffee break and an opportunity for visiting between business sessions in the auditorium of the Sedgwick County Medical Society building. In the center group, from left to right, are Mrs. Louis Cohen, Topeka, president; Mrs. William J. Biermann, immediate past president, and Mrs. Edward D. Greenwood, recording secretary.

publication, *Medical Auxiliary News,* and helps to defray expenses of our annual convention. This year, the society contributed $100 for state prizes in the essay contest of the Association of American Physicians and Surgeons and sent a gift subscription of *Today's Health* to all state legislators.

Program. Following the approval of the Committee on Auxiliary, outlines for the year's work by the state officers and chairmen were distributed to the county presidents at the post-convention board meeting. Literature and material from national were distributed to county auxiliaries. During the summer, the year book was printed and mailed to each member. The fall conference, a two-day meeting, was well attended by state officers, chairmen, councilors, county presidents and presidents-elect, and past state presidents. The state president made 14 county auxiliary visits and attended five area meetings, which afforded her the opportunity to meet and talk with auxiliary members from 29 county groups and some members-at-large.

Public Relations. All component auxiliaries participated in some form of this endeavor. Guest day teas with educational programs on mental health, geriatrics, and other health topics for the wives of legislators, PTA groups, and county nurse Associations, and reciprocal meetings with wives of lawyers, pharmacists, and other groups continue to promote good medical relations. One county maintained a booth at a Home Show (a week's duration) where thousands of pamphlets pertaining to health, civil defense, mental health, safety, and *Today's Health* were distributed. Another had a cancer exhibit at a county fair. Speakers, health and safety films were provided for other organizations by some auxiliaries. The pamphlet "Winning Ways with Patients" was distributed to auxiliary members, doctors, dentists, hospital administrators, and their employees to promote better employee-patient relationship. Seven county auxiliaries participated in the AAPS Essay Contest. This project was successful in spite of great obstacles. A survey to determine the scholarships and loan funds available for student nurses in the state was made for the Kansas League of Nursing.

Community Service and Philanthropic Work. PR not only stands for public relations but for personal responsibility. A survey of the county reports shows that the individual assumed her responsibility in serving her community well and giving many hours of service to health organizations, such as the heart, cancer and tuberculosis associations, the March of Dimes, blood bank, etc. Incalculable volunteer hours were contributed to hospitals, hospital auxiliaries for sewing and other work, Girl Scouts, Community Planning Council, YWCA, Red Cross, Community Chest, etc. Many members hold prominent positions in civic and philanthropic organizations.

Legislation. The state chairman, through a monthly article in our state publication, made an effort to inform the membership on proposed legislation affecting health and medicine with the hope that each one would be stimulated toward: (a) further study of the bills; (b) individual action in support or defeat of the bills on which she was informed. Each county president and legislative chairman was sent a letter explaining two important state bills, one pertaining to the five-point Legislative and Traffic Safety Program proposed by the Kansas Citizens Safety Council and the other concerning the Healing Arts Act and the Basic Science Act. County chairmen were urged to report on legislative activity at the monthly Auxiliary meetings. One county adopted a resolution on highway safety and sent a copy to each legislator and his wife. Many members are active in the League of Women Voters and hold prominent positions.

Publications and Publicity. The Medical Auxiliary News is a four-page monthly publication with the exception of the combined eight-page April-May issue. This issue includes the annual reports of officers, chairmen, and county presidents for permanent records of the year's achievements and progress. Copies of it are sent to all Auxiliary members, to a number of national officers and state presidents, to members of the Committee on Auxiliary, and Auxiliary editors of other states.

Organization. Our total membership was 1,191, including 142 members-at-large and 11 associate members on April 9. We have 33 component auxiliaries, ranging in size from five to 185 members; however, one Auxiliary voted to disband at the close of this year because the members are widely scattered over the county and the doctors no longer meet regularly. Our councilor districts were reorganized to conform with those of the Kansas Medical Society. We now have 17 districts.

Auxiliary Records. The scrapbook and records of the Auxiliary are kept by the chairman of Archives and History. They are filed at the office of the state medical society.

Nurse Recruitment. Nurse recruitment continued to progress with the organization of four new Future Nurses and Careers Clubs, making a total of 25 clubs with an approximate membership of 850. Twenty-two county auxiliaries actively participated in the recruitment program. Fourteen scholarships were given, totaling $2,700, and approximately $3,000 was loaned to student nurses by county auxiliaries. Through the Memorial Loan Fund of the state auxiliary, an additional $500 was loaned to nursing

students. Three counties have members of Future Nurses Clubs working as "Candystripers" in local hospitals. Nurse recruitment teas, the showing of films to high school students, and assisting in a County Career Day were other phases of the program. Recruitment for allied medical services was emphasized, and several groups have already extended their programs. One county gave a scholarship of $150 to a medical technician student; another gave two scholarships of $100 each to students in an allied field; and a third Auxiliary gave assistance to two occupational therapists.

Mental Health. Mental Health activities were twofold—education and service. The educational program was fostered through films, literature, talks, and visits to institutions. Two full mental health programs were developed by members of the Auxiliary through the assistance of the Kansas Division of Mental Hygiene. Twenty-five sets of the Mental Health Hygiene Library packets were given to city libraries. In areas where mental health associations and clinics have been established, the county auxiliaries worked closely with these agencies. Individual members gave volunteer service in mental institutions.

Civil Defense. A vital part of our program was to stimulate concern of the critical importance of preparedness in ANY emergency—natural disaster as well as war. Special emphasis was placed upon Home Preparedness—a First Aid Kit, the supplies of Grandma's Pantry, a flashlight and a portable radio—and individual participation in the community civil defense program. Thirteen auxiliaries have chairmen, and 21 counties participated in some phase of the program. Eleven had regular scheduled programs while the other groups stressed Home Preparedness; provided programs for such organizations as Farm Bureau and PTA groups, RN Study Clubs; distributed literature or worked with other civic organizations. However, the greatest contribution was through individual participation by taking first aid and home nursing courses; teaching such classes; and serving in the Ground Observer Corps. Two members of a small Auxiliary have each served 100 hours in the corps.

Home Safety and Accident Prevention. Each county president was placed on the mailing list for monthly safety literature from the State Highway Traffic Commission. Two counties had programs on safety and distributed literature; and a third group adopted a resolution on highway safety and sent a copy of the resolution to all state legislators and their wives. Individual members represent the Auxiliary on the Kansas Citizens Safety Council and the Governor's Traffic Safety Council of Women. One county member provided a speaker and a film on safety for four civic groups in one day to make a long trip worthwhile for the speaker.

Doctor's Day was observed by many auxiliaries with social functions and gifts of red carnations to the doctors. During the convention, prizes totaling $30 will be awarded for county exhibits on display.

We are happy to have Mrs. Frank Gastineau, third vice-president of the national Auxiliary, as our guest and guest speaker during this annual convention in Wichita. We look forward with pleasure to having Dr. Clyde Miller, president of the Kansas Medical Society; Dr. Barrett Nelson, president-elect; and the members of the Committee on Auxiliary as our luncheon guests on Wednesday, May 8.

All officers and state chairmen were asked to keep and submit an accurate expense account although they may exceed the budget. In the past, some Auxiliary members have found it necessary to use their own money to carry out effectively the various projects of the Auxiliary. It is hoped that accurate expense accounts will furnish necessary information for consideration of an increase in dues. The present state dues are $1.00 per member, which provides a most limited budget—$1,216 this year.

It has been a privilege to serve as president of the Woman's Auxiliary to the Kansas Medical Society. The members of the Kansas Auxiliary join me in expressing sincere gratitude and appreciation to Dr. Clyde Miller and members of the Kansas Medical Society for their guidance and assistance in our Auxiliary endeavors; and to Mr. Oliver Ebel and his staff and to Miss Pauline Farrell for their kindness and assistance throughout the year.

A gift of $6,000 to furnish the multiple purpose room of the children's rehabilitation center now under construction at the University of Kansas Medcial Center was presented recently by the Kansas City (Kansas) Junior League. The organization's president reported, when presenting a check to Dr. W. Clarke Wescoe, dean of the school, that the money had been earned through presentation of a show, the Junior League Follies.

Blue Cross members in 1956 received more than one billion dollars worth of hospital care—the largest amount yet paid in a single year in the history of hospital prepayment. The Blue Cross report indicates that 93 cents of each subscriber's dollar was returned in the form of hospital service benefits. Some 9,000,000 members admitted to hospitals last year received more than 53,000,000 patient days of care.

PHYSICIANS' ACTIVITIES

Dr. William C. Menninger, Topeka, has been selected by the U. S. Chamber of Commerce as "one of the great living Americans" because of his achievements in the advance of mental health.

At a meeting of the Mid-Central States Orthopedic Association held in Colorado Springs recently, **Dr. H. O. Marsh,** Wichita, was reelected secretary-treasurer.

A loan fund honoring the late **Dr. E. C. Petterson,** Plainville, has been established at the University of Kansas School of Medicine with funds contributed by his friends since his death in January of 1956.

Dr. Andre Baude, Topeka, has been appointed to a three-year term on the board of the Kansas Tuberculosis and Health Association.

Kansas lost a physician recently when **Dr. A. R. Cuadrado,** who had been operating the Wallace County Clinic at Sharon Springs, gave up private practice to become chief of staff of the North Carolina Sanatorium at McCain, North Carolina.

Dr. Charles Pokorny, Halstead, Kansas governor for the American College of Chest Physicians, served as chairman of a scientific session of the college at a meeting in New York City early this month.

The Wallace County commissioners have appointed **Dr. William W. Carter,** Sharon Springs, health officer to succeed **Dr. A. R. Cuadrado,** resigned.

The late **Dr. Fred W. O'Donnell,** Junction City, who had a great interest in affairs at Fort Riley, has been honored at the military post. A new housing development on the post has been named O'Donnell Heights.

Dr. William Nice, Topeka, has been named to head the Hillcrest Outpatient Clinic in Topeka, according to an announcement made by **Dr. C. F. Taylor,** superintendent of the State Sanatorium for Tuberculosis at Norton. The Hillcrest facility will continue to operate as a division of the sanatorium. It has been converted from a 20-bed hospital to an outpatient clinic, in accordance with instructions of the Kansas legislature in its last session.

A Wichita physician, **Dr. Maurice M. Tinterow,** was one of the speakers at the annual convention of the Oklahoma State Medical Assistants' Society in Tulsa on May 5.

Dr. Delmond G. Buley, who has completed 50 years of service in the Sedgwick community, was guest of honor at a recent Sedgwick Chamber of Commerce meeting. The entertainment was in the form of a "This Is Your Life" presentation.

A new physician arrived in Anthony to begin practice this month, **Dr. J. M. Williams, Jr.,** who had practiced in Shreveport, Louisiana. Dr. Williams, a graduate of Temple University, had had a residency in obstetrics and gynecology there.

Dr. Galen M. Tice, of the University of Kansas Medical Center, was guest speaker at a meeting of the Douglas County Medical Assistants' Society at Lawrence on May 9.

Dedication services were held at the University of Kansas Medical Center recently for the Lerrigo Memorial Research Laboratory, honoring the late **Dr. Charles H. Lerrigo,** for many years executive secretary of the Kansas Tuberculosis and Health Association.

Dr. David R. Rice, who formerly practiced in Moundridge, has begun a residency in psychiatry at the Veterans Administration Hospital, Denver, and the Colorado University School of Medicine. **Dr. Willard Kaufman** will join the staff of the Mercy Clinic in Moundridge. Dr. Kaufman was graduated from the University of Kansas School of Medicine in 1953, served an internship at Wesley Hospital, Wichita, and then spent two years in Hebron, Jordan, under the sponsorship of the Mennonite Central Committee.

Dr. Monti L. Belot, Jr., Lawrence, was elected president of the nine-county Kaw Valley Heart Association at a meeting held in Fort Leavenworth last month.

A talk on "Our School System" was presented by **Dr. Eugene Myers,** Iola, at a recent meeting of the Allen County Medical Assistants' Society.

Week-ends are the most dangerous time to be on U. S. highways. In 1956, more than 56 per cent of all fatalities occurred on Fridays, Saturdays, and Sundays.

FOR POSITIVE DIURESIS

ROLICTON®

Brand of Amisometradine

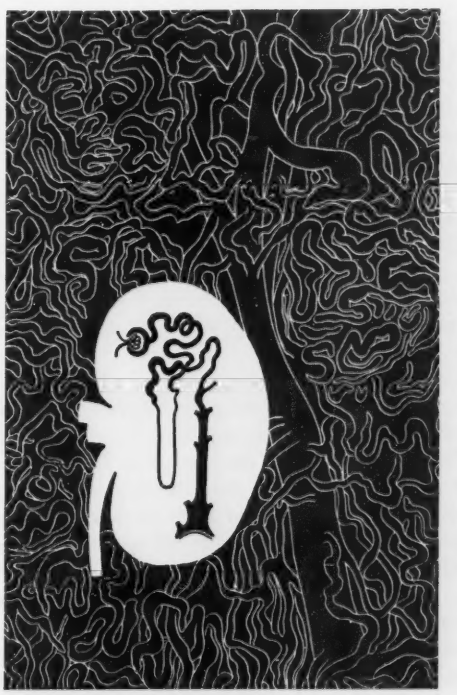
- oral b.i.d. dosage
- continuous control of edema

The new, highly effective oral diuretic, Rolicton, greatly simplifies the task of maintaining an edema-free state in the patient with congestive heart failure. Rolicton meets the criteria for a dependable diuretic: continuous effectiveness, oral administration and clinical safety.

In extensive clinical studies the diuretic response clearly indicates that a majority of patients can be kept edema-free with Rolicton. In these investigations it was noted that side reactions were uncommon. When they did occur they were usually mild.

In most edematous patients Rolicton may be employed as the sole diuretic agent. When used adjunctively in severe cases, Rolicton is also valuable in eliminating the "peaks and valleys" associated with the parenteral administration of mercurial diuretics.

One tablet of Rolicton b.i.d., after meals, is usually adequate for maintenance therapy after the first day's dosage of four tablets. Some patients respond well to one tablet daily. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.



SEARLE

THE MONTH IN WASHINGTON

Editor's Note. The following summary of Washington news was prepared by the Washington office of the A.M.A. for distribution to state and regional medical journals.

Again the Jenkins-Keogh plan is up for consideration in Congress. While there is no assurance it will be passed, or even get out of the House Ways and Means Committee, many sponsors of the legislation this year are united in one organization and are making themselves felt on Capitol Hill.

Briefly, this bill would allow any self-employed person to put a limited portion of his income into a retirement fund without paying income taxes on the money. Taxes would be paid when the money was received as pension or retirement.

Sponsors of the Jenkins-Keogh plan point out that it very definitely is not legislation to give a special tax advantage to one group of people. For one thing, every self-employed person would be eligible, from farmers to doctors and from opera singers to architects. For another, corporations since 1942 have been allowed to put money into retirement funds for their employees without payment of federal taxes on the money; the self-employed merely want the same consideration.

At various times the American Medical Association has led in the campaign for enactment of legislation of this type. Two years ago the House Ways and Means Committee voted to report it out, as part of a broader tax bill, but the committee never actually got around to sending the combined bill to the House floor.

Now the lead is being taken by a newly-formed American Thrift Assembly, or officially the American Thrift Assembly for Ten Million Self-Employed. In addition to the A.M.A., the new group has the support of American Dental Association, American Bar Association, and a score or more of other national organizations that represent the self-employed.

After the Congressional session was well under way, the A.T.A. surveyed the political-legislative climate and found it favorable for Jenkins-Keogh. Then in early May the assembly asked its constituent associations to go to work. They were urged to have all members contact the House Ways and Means Committee with requests that the Jenkins-Keogh bill be reported favorably to the House floor. Assembly strategists are confident that if the committee hears from enough of the people who would be affected, it will approve the bill before adjournment. Then, if there isn't time for House action this year, that step can come next year.

Economy has been the main obstacle in the path of Jenkins-Keogh—the fear on the part of the Treasury Department that passage of the bill would mean a serious loss of income tax revenue. However, the Treasury has never denied that the bill is justified to equalize tax status for the self-employed in relation to corporation employees.

Answering the economy argument, the Assembly makes two points:

First, the set aside funds, invested in the country's economy, would stimulate business and develop far more in new income tax payments than it would cost.

Second, because the self-employed who retain their health rarely retire at any arbitrary age, many of them in the years past 65 would remain in a tax bracket not significantly lower than when they paid into the retirement fund.

When Congress votes the money, the new home of the National Library of Medicine will be constructed at Bethesda, Maryland, near the National Institutes of Health and the Navy Medical Center. This site was selected by the board of regents at its second meeting.

The continuing national health survey is under way. Each month from now on, 140 Census Bureau interviewers will visit 3,000 homes, asking questions about illness and disability. On the basis of the data collected, the Public Health Service will publish national and regional reports on morbidity and mortality.

Because of widespread interest aroused by Senate hearings, there is considerable pressure for action before adjournment on legislation for some form of federal control over union welfare funds. One bill, by Senator Goldwater, would lay down strict procedures, including regular audits.

Also before Congress, but not making rapid progress, is a bill that would give the federal government control over amphetamines and barbiturates. Various types of bookkeeping and registration would be required, but physicians would be exempt from the requirements. It has administration support.

WHY SENSITIZE

in topical and ophthalmic infections

USE 'POLYSPORIN'®

brand

POLYMYXIN B—BACITRACIN OINTMENT

to insure broad-spectrum therapy with minimum allergenicity

For topical use: in ½ oz. and 1 oz. tubes.
For ophthalmic use: in ⅛ oz. tubes.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

THE KANSAS PRESS LOOKS AT MEDICINE

Doctor in the House

There are 82 medical schools in the United States. They produce about two-thirds the number of doctors the nation needs.

Fifteen years ago, these 82 schools had an operating cost of $27 million a year. Today their cost is $120 million a year.

It is estimated that about one-sixth of this amount comes from tuition. If an attempt were made to get any more from tuition, the result would be only to drive many qualified young men and women out of medicine.

The brutal fact is that most of the medical schools in wonderfully rich America are desperately poor, fighting a losing battle for solvency. This is as unreasonable as it is disgraceful.

For the medical school is no mere factory for doctors. It serves the public welfare in countless ways. Medical schools last year spent $60 million for research—research which may eventually save your life or mine. They took care of two million needy persons who, admittedly served to some degree as raw materials for students, but who nevertheless did get aid.

There are few great fortunes left today, to be tapped for private grants for such things as medical schools. The schools need aid and the aid must be public. Were we to spend, as a whole people through our taxes, a fraction as much in the medical schools' fight against death and pain as we spend with Boeing to devise ways to deliver more and cheaper death, we could solve the problem.

But we resist federal aid to medical schools. We Americans, like the fearful alcoholic, fear that to take one nip is to become a drunkard. We're afraid that assistance to medical schools will result finally in socialized medicine.

I don't buy that. I believe we've enough smart doctors and smart politicians to devise a formula where we could aid the medical schools and still safeguard them.—*Hutchinson News-Herald, April 25, 1957.*

Drivers under 25 years of age were involved in more than 27 per cent of 1955's fatal accidents, reports the Travelers Insurance Companies. Such drivers comprise only about 14 per cent of the total of the nation's drivers.

Status of Communicable Diseases

Developments in medicine and public health, together with a high standard of living, have cut the communicable disease death rate in the United States by about 90 per cent since 1900, Health Information Foundation reports. Three disease groups, pneumonia and influenza, tuberculosis, and diarrhea and enteritis, which caused a third of all deaths in 1900, were responsible for only one-twentieth of all deaths last year.

Nevertheless, says the Foundation, these communicable diseases are still an important public health problem. The pneumonia-influenza group alone, for example, is currently the sixth leading cause of death, taking the lives of 45,000 Americans last year, more than the total number of fatalities in motor-vehicle accidents.

Out of 1,740,000,000 U. S. Savings Bonds issued so far, more than 800,000 have been reissued by the Treasury Department to replace lost, stolen, damaged, or destroyed bonds.

DEATH NOTICES

Charles Samuel Adams, M.D.

Dr. C. S. Adams, 81, an honorary member of the Stafford County Medical Society, died on April 21 at Larned, where he had been living with his daughter since his retirement several months ago. He had been in practice since 1903, having had an office first in Hudson and then in St. John. During World War I he was in military service, after which he served the U. S. Veterans Bureau before returning to his practice in St. John. He remained active until he suffered a heart attack last December.

Justus Odell Williams, M.D.

Death came to Dr. J. O. Williams, 77, at his home at Emporia on May 7 after an illness of several months. A graduate of the University Medical College of Kansas City in 1905, Dr. Williams first practiced in Emporia, leaving there during World War I to serve in the Army in New Orleans. He was a charter member of the American Legion post in Emporia and was an honorary member of the Lyon County Medical Society.

Trasentine®-Phenobarbital

integrated relief...
mild sedation
visceral spasmolysis
mucosal analgesia

TABLETS *(yellow, coated), each containing 50 mg. Trasentine® hydrochloride (adiphenine hydrochloride CIBA) and 20 mg. phenobarbital.*

CIBA
Summit, N. J.

Acute Pancreatitis

A Study of Its Etiology and a Review of the Literature

ROBERT E. DELPHIA, M.D., ***Kansas City, Missouri***

Acute pancreatitis is a disease whose etiology has been highly debated since Fitz'[35] description of 17 cases in 1889. In 1901 Opie[68] performed an autopsy on a patient who had acute pancreatitis in the presence of an impacted gallstone in the ampulla of Vater; he postulated that the pancreatitis was caused by retrograde flow of bile into the pancreatic ducts and their radicles.

A brief outline of pancreatic exocrine secretion is presented here as an aid to later discussion of acute pancreatitis. The secretions of the pancreas are under both hormonal and autonomic nerve control. In 1902 Bayliss and Starling[9] found that parenteral injection of a hydrochloric acid extract of duodenal mucosa, or the introduction of HCl into the duodenum, caused pancreatic secretion in laboratory animals; they called this unknown substance secretin. Secretin causes the secretion of water and bicarbonate, leaving the enzymatic secretion essentially unchanged.[38, 74]

A second hormone, pancreozymin, stimulates the secretion of digestive enzymes by the acinar cells.[40] Vagal stimulation produces a viscid secretion rich in enzymes.[3, 35, 56] The chief proteolytic enzymes of the pancreas are trypsinogen and chymotrypsinogen, and these are activated by enterokinase from the small intestine. Minute amounts of trypsin act autocatalytically to activate both substances. The other important enzyme is lipase, which is activated by bile salts and some proteins. It is generally believed that fatty acids released by the enzymatic hydrolysis of neutral fat combine with calcium from blood and tissue fluid to form calcium soaps; this, in turn, leads to typical "fat necrosis."

Acute pancreatitis may vary in intensity from mild edema with minimal symptoms to a fulminating hemorrhagic necrosis with severe pain, shock, and death. It is felt[28, 77] that the essential factor in the production of the disease is the escape of pancreatic secretions, rich in trypsin or trypsinogen, from the ducts or acini into the interstitial tissue where the trypsin can erode blood vessels. Recent experimental studies on dogs[73] provide suggestive evidence that increased amounts of trypsin in the blood activate the trypsinogen in the pancreas, thus producing acute pancreatitis. They further suggest that the degree of edema or hemorrhage is proportional to the amount of trypsinogen retained in the pancreas as a result of obstruction of outflow of secretions. There are undoubtedly a number of ways by which this activation of pancreatic juice can be brought about.

Since the work of Opie[68] and Fitz,[35] numerous articles have been written in an attempt to explain the etiology of acute pancreatitis. It is the purpose of this paper to review and make an attempt at evaluation of most of the various possible etiological factors in this disease.

The Common Channel Theory

Long before the postulation of the common channel theory by Opie,[68] clinicians had noted a high frequency of chronic biliary tract disease in cases of acute pancreatitis; this relationship has been verified by subsequent clinical and experimental study. In a series of 1,278 cases of operated pancreatic necrosis, Schmeiden and Sebening[78] found that 894 (69.8 per cent) were associated with biliary tract disease. Ivy and Gibbs,[44] in reviewing the literature on acute pancreatitis, found that there was cholelithiasis in 55 per cent of 667 patients, acute cholecystitis in 18 per cent of 238 patients, and a normal gallbladder in 30 per cent of 125 patients. They also noted an 18 per cent incidence of acute pancreatitis in 163 patients with acute cholecystitis. More recent studies show an association of cholecystitis with acute pancreatitis in 31 to 33 per cent.[12, 64, 67] Thus, most reports suggest that, in acute pancreatitis, cholecystitis is present in more than 30 per cent of the cases. In their review of literature, Ivy and Gibbs noted that an impacted stone was found to be the etiology of pancreatic disease in only 5 per cent of 2,004 cases. It has been suggested[56, 88] that the cause of obstruction in patients with gallstones which are not obstructing the ampulla may be explained on the basis of easier susceptibility of the sphincter to spasm.

Obstruction of the Common Bile Duct

It was the work of Opie[68] which initiated and gave credence to the theory that bile in the pancreatic ducts

---

This is one of 11 theses, written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Delphia is now serving his internship at St. Joseph Hospital, Kansas City, Missouri.

relaxes both mind and muscle

for anxiety and tension in everyday practice

- well suited for prolonged therapy
- well tolerated, relatively nontoxic
- no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness
- chemically unrelated to phenothiazine compounds and rauwolfia derivatives
- orally effective within 30 minutes for a period of 6 hours

For treatment of **anxiety and tension states and muscle spasm**

Miltown®

THE ORIGINAL MEPROBAMATE

2-methyl-2-n-propyl-1,3-propanediol dicarbamate—U. S. Patent 2,724,720

Tranquilizer with muscle-relaxant action

DISCOVERED AND INTRODUCED

BY WALLACE LABORATORIES, *New Brunswick, N. J.*

SUPPLIED: *(Bottles 50 tablets)*
400 mg. scored tablets
200 mg. sugar-coated tablets

USUAL DOSAGE: *One or two 400 mg. tablets t.i.d.*

Literature and Samples Available on Request

THE MILTOWN® MEPROBAMATE MOLECULE

NOW IN 2 CONVENIENT DOSAGES

NEW 200 mg. SUGAR-COATED TABLETS

STANDARD 400 mg. SCORED TABLETS

CM-3421-R4

Relaxes without impairing mental or physical efficiency

. . . well suited for prolonged therapy

1 "The primary finding of these studies is that meprobamate ['Miltown'] alone . . . produces no behavioral toxicity in our subjects as measured by our tests of driving, steadiness and vision."

Marquis, D. G., Kelly, E. L., Miller, J. G., Gerard, R. W. and Rapoport, A.: Ann. New York Acad. Sc. 67:701, May 6, 1957.

2 "Since it [meprobamate—'Miltown'] does not cloud consciousness or lessen intellectual capacity, it can be used . . . even by those busily occupied in intellectual work."

Keyes, B. L.: Pennsylvania M. J. 60:177, Feb. 1957.

3 ". . . the patient never describes himself as feeling detached or 'insulated' by the drug ['Miltown']. He remains completely in control of his faculties, both mental and physical . . ."

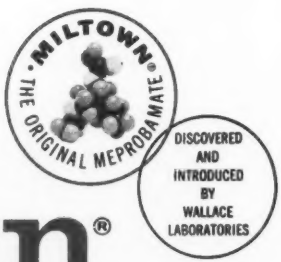
Sokoloff, O. J.: A.M.A. Arch. Dermat. & Syph. 74:393, Oct. 1956.

4 "It ['Miltown'] . . . does not cloud the sensorium, and has a helpful somnifacient effect devoid of 'hangover'."

Kessler, L. N. and Barnard, R. D.: M. Times 84:431, April 1956.

5 "In anxiety and tension states, meprobamate relaxes without dulling cortical function to the same extent as the commonly-used barbiturates."

Rindskopf, W., Ravreby, M., Gutenkauf, C. and Sands, S. L.: J. Iowa M. Soc. 47:57, Feb. 1957.



Miltown®

2-methyl-2-n-propyl-1, 3-propanediol dicarbamate—U.S. Patent 2,724,720

TRANQUILIZER WITH MUSCLE-RELAXANT ACTION

SUPPLIED: *400 mg. scored tablets*
200 mg. sugar-coated tablets
USUAL DOSAGE: *One or two 400 mg. tablets t.i.d.*

Literature and samples available on request

WALLACE LABORATORIES, *New Brunswick, N. J.*

YOU'LL
ENJOY
COOL
COLORADO
IN
AUGUST

ST. JOSEPH'S HOSPITAL

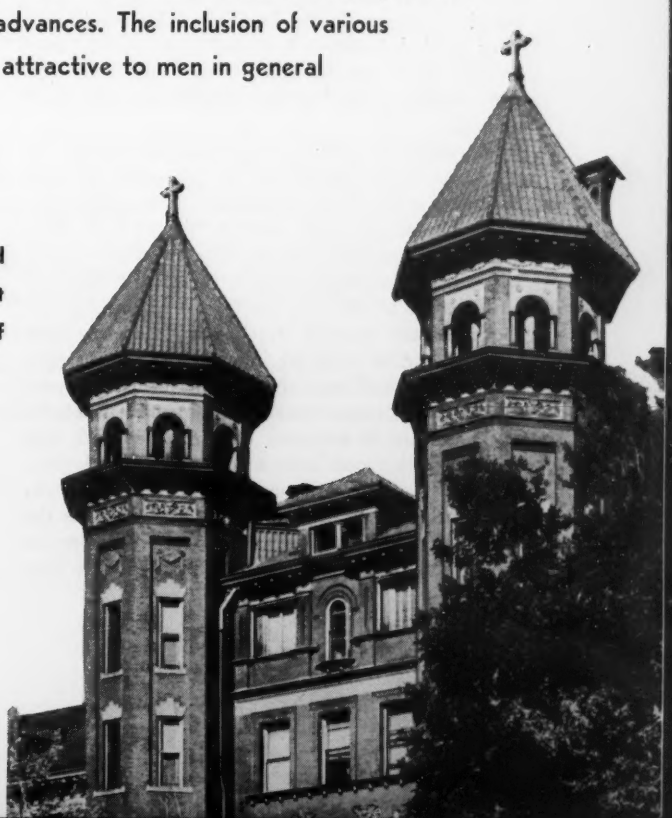
DENVER, COLORADO

4th ANNUAL CLINICS

AUGUST 1, 2 and 3, 1957

The staff of St. Joseph's Hospital will present a postgraduate review of practical approaches to general medicine, obstetrics and surgery . . . and a presentation of recent advances. The inclusion of various specialties will make the clinics attractive to men in general practice

These clinics have been approved for 20 hours of Category I credit by the American Academy of General Practice



FOR DETAILED PROGRAM WRITE
MRS. HOGUE—Secretary to the Administrator
St. Joseph's Hospital
1818 Humboldt Street
Denver 18, Colorado
Clinic Registration Fee: $5.00

could cause acute pancreatitis. In an autopsy study of 100 cases, Opie[69] found a common opening of the common duct and the duct of Wirsung in 89 specimens; but he concluded that the distance from the opening of the duct of Wirsung to that of the ampulla of Vater was sufficient to allow formation of a common channel by an impacted stone in only 30 per cent of cases.

Cameron and Noble,[16] frequently quoted by those arguing in favor of the common channel theory, placed a small biliary calculus in the ampulla of Vater in 100 fresh autopsy specimens and injected colored fluid into the common duct. By this method they were able to demonstrate regurgitation of fluid into the duct of Wirsung in 66 per cent of the cases. This, however, completely neglects the concept that irritation or dilatation of the duct by a stone may cause contraction of the sphincter muscles of both the common and pancreatic duct in the living individual, thereby preventing reflux of bile into the pancreatic duct.

Ravdin and Johnson,[75] after reviewing several studies published prior to 1942, concluded that "There is anatomic possibility of formation of a common channel in 60 to 70 per cent of the cases, and there is direct evidence that this does occur in a considerable number of patients."

On the basis of 250 routine autopsies, Reinhoff and co-workers[76] concluded that a common channel could be formed in 17 per cent of the population. Mann and Giordano[62] found the pancreatic duct and common bile ducts entering the duodenum by a common opening in 20 per cent of 200 routine autopsies; however, they concluded that in only 3.5 per cent would a common channel be a reasonable possibility. They concluded that an impacted stone would likely occlude the pancreatic duct in the other 16.5 per cent, thereby preventing the formation of a common channel.

Numerous successful attempts have been made at producing acute pancreatitis in laboratory animals by injecting bile from the animal's own gallbladder into occluded pancreatic ducts.[4, 26, 43, 70, 71, 79] Rich and Duff[77] suggest that the large amount of bile which many investigators used, rather than the irritating effect of the bile itself, was responsible for the pancreatic necrosis which was produced. They injected 2 cc. of India ink into the ligated pancreatic ducts of dogs and found that even such small amounts of substance caused rupture of the small pancreatic ducts and led to extrusion of particles of ink into the pancreatic tissue. It must be borne in mind, then, that the fact that injection of bile into the ducts causes acute pancreatitis does not prove that it is the action of the bile itself. One must also consider the mechanical trauma of injecting bile at greater than physiologic pressure and the fact that occlusion of the ducts may cause backing up of pancreatic secretions, with resultant mechanical damage from the increased pressure or the activation of the pancreatic juice by the bile.

In experiments in which adult animals were operated on in such fashion as to cause reflux of bile into the pancreatic ducts under physiological pressures, it was not possible to cause pancreatitis.[62, 80, 84, 88, 93] Sensenig and Bowers[80] ligated the common bile duct of dogs, constructed a retrograde pancreatic enterostomy, and injected 6 to 10 cc. of the dogs' own bile into the pancreatic ducts. Whitrock and co-workers[93] ligated the common ducts of goats, removed a distal portion of the tail of the pancreas, and constructed a retrograde pancreatico-jejunostomy, so that all bile drained through the pancreatic ducts into the jejunum. Neither group found any evidence of pancreatitis in those animals whose retrograde drainage remained patent.

One of the reasons for the popularity of the theory that bile itself is responsible for acute pancreatitis is the fact that active trypsin is frequently found in normal pancreatic ducts;[6, 20] however, it is known that calcium, bile, and tissue juice,[44] enterokinase,[44, 77] and HCl[56] will activate trypsinogen.

Spasm of the Sphincter of Oddi

As early as 1919, Archibald[5] produced typical hemorrhagic pancreatitis by the introduction of HCl into the duodenum of cats. He argued that, in the absence of stones, such elements as edema and spasm of the sphincter of Oddi could cause obstruction of the ampulla of Vater. Layne and Bergh[54] observed, in human surgery when the common duct was painfully distended, that contraction of the sphincter of Oddi continued 5 to 20 minutes after the relief of distention. Elman,[31] in 1942, and Ravdin and Johnson,[75] in 1943, again suggested spasm of the sphincter as a possible etiologic factor in many cases of acute pancreatitis. Ravdin and Johnson injected solutions into the pancreatic ducts of cats in the presence of spasm of the sphincter of Oddi and found that the pressure required to break the spasm was frequently as high as 800 mm. of water, presumably far above the physiological level.

Spasm of the sphincter of Oddi has been demonstrated to be initiated by a host of agents and mechanisms. In man, spasm can be produced by painful distention of the common duct,[24, 54] by acid in the duodenum,[5, 24] by morphine injection,[24, 73] by parasympathomimetic agents such as pilocarpine, mecholyl and urecholine,[45] by the pain of venapunctures, and by emotional disturbances.[25] Irritation of the colon of the dog often causes similar spasm.[45]

specifically for reduction of overweight

PRELUDIN®

(brand of phenmetrazine hydrochloride)

"...a highly effective and safe appetite suppressant..."[1]

Based on clinical reports, PRELUDIN produces more than twice the weight loss achieved by patients receiving a placebo.[2] It is singularly free of tendency to produce serious side actions, as well as stimulation.[1-3] PRELUDIN imparts a feeling of well-being that encourages the patient to cooperate willingly in treatment.[1-3]

The reduced incidence of side actions with PRELUDIN makes losing weight more comfortable for the average patient, facilitates treatment of the complicated case and frequently permits its use where other anorexiants are not tolerated.[3]

Recommended Dosage: One tablet two to three times daily one hour before meals. Occasionally smaller dosage suffices. On theoretical grounds, PRELUDIN should not be given to patients with severe hypertension, thyrotoxicosis or acute coronary disease.

(1) Holt, J. O. S., Jr.: Dallas Med. J. 42:497, 1956. (2) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.: Am. J. Digest. Dis. 1:155, 1956. (3) Natenshon, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956.

PRELUDIN® (brand of phenmetrazine hydrochloride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

GEIGY Ardsley, New York 77687

Ligation of the Pancreatic Duct

Ligation of the pancreatic duct in animals offers an excellent experimental means of simulating the effect of obstruction of the pancreatic duct or spasm of the sphincter of Oddi. This procedure alone produced focal inflammation, degeneration and atrophy of acini, plus fat necrosis in rats,[11] mild edematous pancreatitis in cats,[56] and mild interstitial edema with some polymorphonuclear infiltration in dogs.[73] Hemorrhage or necrosis, however, was not produced in any of these experiments.

Von Anrep[3] noted an increase in size of the pancreas with subsequent increased rate of secretion when the vagus nerve was stimulated. Lium and Maddock[56] combined the two procedures (ligation of the duct and vagal stimulation) to produce acute pancreatitis in cats. Thistlewaite[88] produced elevated serum amylase levels in dogs by this same procedure. Acute pancreatitis was produced by pancreatic duct ligation and injection of pilocarpine in cats[89] and by combining duct ligation with the injection of secretin in dogs.[72] Radakovich[74] showed that elevated serum amylase levels may be produced by ligating the pancreatic ducts and either injecting secretin or pancreozymin, or by feeding heavy meals. Werner[92] produced acute pancreatitis in dogs by merely subjecting them to continuous intravenous drip of mecholyl.

In a well-controlled study,[56] the pancreatic ducts of some cats were ligated, while others of the group were left intact; all of them received either fatty meals, acetlycholine and eserine injection, pilocarpine injection, intravenous secretin, or vagal stimulation. In all cats in which the ducts were ligated, acute pancreatitis was produced. The most extensive and constant damage resulted in those animals which were fed two hours prior to ligation of the ducts.

It is obvious that spasm of the sphincter, obstruction of the ducts, or any other obstruction of the outflow of pancreatic juice is extremely important in producing pancreatitis, and the presence of bile in the ducts is not absolutely necessary for its production.

Traumatic Pancreatitis

It has long been recognized that abdominal surgery in which the pancreatic ducts were ligated would produce acute pancreatitis. Recently, it has been emphasized that this disease may follow almost any intra-abdominal trauma[28, 59, 90, 91] and certain extra-abdominal trauma or surgery.[19]

In a series of 100 intra-abdominal operations, which included 20 subtotal gastrectomies and 30 biliary tract procedures, Mahaffey and Howard[61] determined serum amylase levels preoperatively and, in most cases, 1, 24, 48, and 72 hours postoperatively. They found that the serum amylase level rose to 80 units in nine patients and to over 50 units in 27 patients (their normal: 15 to 40 units). In 31 operations consisting of thyroidectomies, thoracic procedures, amputations, and herniorrhaphies, no elevation of serum amylase was detected.

Millbourn[65] found that 10 per cent of 147 patients who had gastric resections developed elevated urinary diastase levels. In his series of eight fatal cases which went to autopsy, Dunphy[28] noted that ductal obstruction could be a factor in only four. He suggested that minor interference with blood supply was an important factor and that "sludging of the pancreatic secretions incidental to medication, dehydration, and other factors associated with surgical operations may be a contributing factor." Warren,[90] in reporting three cases of acute pancreatitis caused by external trauma, attributed the disease to minor contusion with slight hemorrhage and disruption of ductules, allowing escape of pancreatic secretion, digestion of devitalized tissues, and extensive necrosis.

Recent work by Powers, Brown, and Stein[73] suggests another possible explanation of the pathogenesis of acute pancreatitis. These workers produced acute hemorrhagic pancreatitis and elevated serum trypsin levels in three dogs by the production of splenic infarction in the presence of ligated pancreatic ducts. They postulated that necrotic tissue releases trypsin which enters the blood stream and, in turn, activates trypsinogen in the pancreas.

No attempt is made here to tabulate all of the

TABLE I

AUTOPSY DIAGNOSIS OF ACUTE PANCREATITIS FOLLOWING ABDOMINAL SURGERY OR TRAUMA

	Schmeiden & Sebenig[78]	*Warren*[90]	*Coffey*[19]	*Dunphy, et al.*[28]	*MacKenzie*[59]
Number of Cases	140	4	4	8	7
Gastric Surgery	91	1	—	3	2
Biliary Tract Surgery	38	2	—	3	3
Splenectomy	7	—	—	—	—
Pancreatic Biopsy	4	1	—	—	1
Abdominal Wound Penetrating Pancreas	—	—	3	—	—
Cesarean Section	—	—	—	1	—
Appendectomy	—	—	—	1	—
Femoral Embolectomy	—	—	—	—	1
Crushing Abdominal Trauma	—	—	1	—	—

can you read this thermometer,

doctor?

Naturally not. Missing calibration makes it worthless.

Equally useless and dangerous is a "quantitative" urine-sugar test that does not quantitate dependably, or omits readings in the critical range.

Enzyme urine-sugar tests are sensitive and specific for glucose—excellent "yes" or "no" tests but undependable for quantitation. King and Hainline,[1] after testing 1,000 urines, found an enzymatic urine-sugar test unable to distinguish in the important range between ½ per cent and 2 per cent or more of urinary glucose. Leonards,[2] in a report on 4,020 tests, revealed that "...in 502 out of 804 tests the wrong interpretation was made." He concluded that enzymatic urine-sugar testing "...as a quantitative procedure is unsatisfactory and can lead to serious error in the interpretation of a patient's clinical condition."[2]

Failure to recognize this limitation of enzyme tests may result in incorrect insulin dosage,[2] and may lead to diabetic complications.

(1) King, J. W., and Hainline, A., Jr.: Commercial Glucose Oxidase Preparations for the Detection of Glucose in Urine, Cleveland Clin. Quart. 23:212, 1956. (2) Leonards, J. R.: Evaluation of Enzyme Tests for Urinary Glucose, J.A.M.A. 163:260 (Jan. 26) 1957.

reliable readings throughout the critical range—
does not omit ¾% (++) and 1% (+++)

color
calibrated
CLINITEST®
BRAND

a 15 year "standard" in urine-sugar testing

AMES COMPANY, INC. • ELKHART, INDIANA • Ames Company of Canada, Ltd., Toronto

38157

cases of postoperative or traumatic pancreatitis that have been reported. Table I lists a few of the procedures and accidents which have been noted to be etiological factors. It would appear that any manipulation or abdominal trauma is hazardous insofar as normal function of the pancreas is concerned. It is also apparent that acute postoperative pancreatitis may result even when the pancreas has not been manipulated.

Other Causes of Obstruction

Carcinoma of the ampulla of Vater, of the head of the pancreas, or of adjacent organs may cause occlusion of the common channel, with resultant acute or chronic pancreatitis. Obstruction of the common duct by Ascaris,[78] by a distended loop of bowel,[63] and by edema of the ampulla of Vater[7] have been suggested as rare causes of acute pancreatitis in human patients in whom no other factor could be found to explain the disease. Rich and Duff[77] noted small vesicles and epithelial proliferations in the pancreatic ducts of 18 per cent of 150 human autopsy cases. In 13 of 24 cases of acute pancreatitis in this series, the metaplastic epithelium was occluding the ducts and the ducts were dilated proximal to the areas of obstruction.

Cholangiography and the Reflux of Bile

Cholangiography has offered another means of studying physical behavior of fluid within the pancreatic and biliary duct systems. It has been shown,[75] when radiopaque substances are injected through a T-tube into the common duct, that there is a free flow of the mixture of dye and bile into the pancreatic duct in 20 per cent of cases. In a similar study, Mirizzi[66] concluded that there was an active flow or current which carried lipiodal and bile into the pancreatic ducts. At pressures not greater than 30 mm. of water,[42] reflux of bile or dye into the pancreatic ducts of humans has been substantiated by the demonstration of opaque media in the pancreatic ducts and by an elevated serum amylase in 30 minutes from the time of introduction of the media.

In an intriguing study,[41] 100 patients with cholelithiasis and choledocholithiasis were subjected to cholangiography. Thirteen of these patients had clearly demonstrated separate duodenal openings of the common duct and the duct of Wirsung; in all of them, the pancreatic duct was visualized by cholangiography. These authors postulate, in the 13 patients with separate openings, that the dye entered the duodenum via the common duct and regurgitated from the duodenum into the pancreatic ducts. It is conceivable that an aberrant duct between the two large ducts may have been overlooked in these cases.

Cholangiography has served to verify the fact that a common channel can be formed. A recent review of literature[44] shows that the pancreatic duct was visualized by this method in 35 per cent of 1,431 patients; this closely parallels the figure of 30 per cent arrived at by Opie.[68]

Evaluation of the Common Channel Theory

It has been shown that acute pancreatitis may occur in cases in which obstruction of the common duct could not be a factor in its etiology. Cases have been reported[8, 22, 46, 81] in which focal pancreatitis occurred in areas drained by a patent duct of Santorini. There are reports, also, of acute pancreatitis in which the patent duct of Wirsung opened separately in the duodenum.[22, 62, 77] Longmire[57] reported two cases in which acute pancreatitis occurred in an aberrant pancreas, one along the mesenteric border of the duodenum and the other in a Meckel's diverticulum.

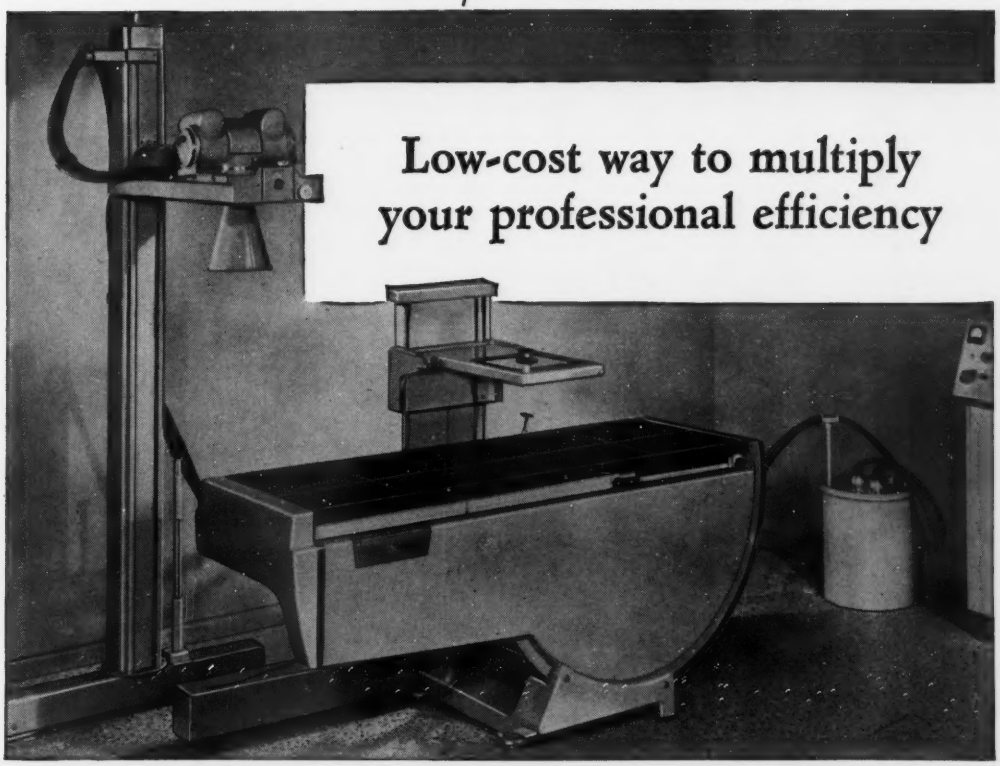
It appears well established that: (1) Reflux of bile into the pancreatic ducts is a rather common occurrence; (2) Acute pancreatitis is a frequent complication of biliary tract obstruction; and (3) There is an increased frequency of acute pancreatitis in patients who have chronic gallbladder disease. There is, however, no direct evidence that the mere presence of bile in the pancreatic ducts is responsible for the production of acute pancreatitis.

From experimental and clinical evidence, it is probable that the factor of greatest importance is obstruction of the pancreatic ducts by such mechanisms as an impacted calculus, spasm of the sphincter of Oddi, edema of the duodenal mucosa, or trauma to the duct system. Assuming obstruction of the pancreatic ducts, serious pancreatic inflammation usually occurs only in the presence of an actively secreting gland.[56] The probable sequence of events is that the increased pressure ruptures small ductules allowing pancreatic juice to come into direct contact with blood vessels and the pancreatic tissue. Edema, vascular necrosis, or fat necrosis may result, and it is postulated[56] that the type and extent of tissue damage is commensurate with the volume and enzyme content of the pancreatic juice. Once pancreatic juice reaches the tissue spaces it begins to produce necrosis and inflammation. The main point to consider, then, is how the pancreatic juice reaches the tissues.

Metabolic Factors

Alcohol. There is undoubtedly an increased incidence of pancreatitis in acute or chronic alcoholism. It was pointed out by Ivy and Gibbs,[44] in a review of 357 autopsy cases of acute alcoholics, that 25 per cent had pancreatitis in some form. They noted also that the incidence of alcoholism in pancreatitis was approximately 20 per cent, whereas the incidence in

PATRICIAN / *a General Electric product in step with your progress*



Low-cost way to multiply your professional efficiency

YES, the broad diagnostic versatility that is yours with the G-E Patrician opens new possibilities for your practice. Now, at a price competitive with low-power, limited-range apparatus, you can get comprehensive radiographic and fluoroscopic facilities — 200-ma, 100-kvp, full-wave power.

Consider these three possibilities:

- You want to add x-ray service for your patients but have been deterred by the capital outlay you *thought* was required for modern apparatus.
- Your patient load has swamped your present x-ray machine, but not to an extent that justifies a *large* added investment.
- Your diagnoses are handicapped by a slow, inflexible, under-powered unit.

If your situation parallels one of these three, it will pay you to get the complete story on the Patrician. Use this coupon or ask your G-E x-ray representative, who can also give you the facts on General Electric's convenient financing plans.

X-RAY DEPARTMENT
GENERAL ELECTRIC CO.
Milwaukee 1, Wis.

- ☐ Send your 16-page PATRICIAN bulletin.
- ☐ Facts about deferred payment.
- ☐ MAXISERVICE® rental plan.

Name.....

Address.....

City.....Zone.....State.....

Progress Is Our Most Important Product

GENERAL ELECTRIC

Direct Factory Branches: 112 West 19th St., KANSAS CITY, MO.

the general adult population is approximately four per cent.

The mechanism by which alcohol ingestion may lead to pancreatitis is still unknown. It has been suggested[5, 30, 33] that it produces inflammatory reaction in the duodenum with edema of the papillae of the ducts. Stimulation of pancreatic secretion may occur[60] as a direct result of alcohol administration; however, experimental work with dogs[15, 44] and an elevation of the therapeutic use of intravenous alcohol in humans[27] failed to demonstrate the production of acute pancreatitis.

Alcohol and large meals are frequently the precipitating factor in attacks of acute pancreatitis.[32] Recent reports show that a history of acute alcoholism was obtained in 55 per cent of 108 patients,[67] 31 per cent of 78 patients,[12] and 34 per cent of 126 patients[64] with acute pancreatitis.

Methyl alcohol has been reported[10] as a cause of acute pancreatitis. In this group of 300 cases, there were 17 fatalities, 13 of whom had acute pancreatitis.

Straus[83] cites a patient with chronic relapsing pancreatitis who could be counted on to take alcohol when released from the hospital. With each release, he would soon return with a new attack of pancreatitis. He postulated that the previous numerous attacks of pancreatitis had resulted in cicatrical stenosis of the duct system of such degree that each episode of acute alcoholism produced rupture of the proximal ducts and a fresh relapse.

High Fat-Low Protein Diet. Although perhaps of minor importance in acute pancreatitis, the postulation that dietary deficiency, a common phenomenon in alcoholics, may produce a chronic state of hyperlipemia is offered here as a possible etiological factor in the chronic forms of pancreatitis. The feeding of high fat-low protein diets over prolonged periods produced pancreatitis in rats[39] and in dogs.[55]

In the latter study, 13 dogs were subjected to diets of this type and all developed fatty livers in 14 to 38 weeks. Eleven of these developed pancreatitis of moderate degree, similar to human chronic pancreatitis. Reports of elevated blood fat levels in human acute pancreatitis have been reported.[19, 29, 36, 48, 49] Coffey[19] reported five such cases, two of which were in patients with proved diabetes. It is apparent, then, that high fat-low protein diets will produce pancreatitis; however, the mechanism of production is not understood.

Experimental Studies with Ethionine. Recently, a new tool for experimental study of the function of the pancreas has been utilized. This substance, ethionine, is an analogue and antimetabolite of methionine, an essential amino acid. Intraperitoneal injection of ethionine[34, 50] into fasting rats will produce acute pancreatitis; whereas, simultaneous injection of methionine with ethionine will prevent the disease. DeAlmeida and Grossman[23] injected daily doses of 100 mg./kg. of body weight into dogs, cats, and monkeys. These animals were divided into three groups; i.e., they were either starved, well fed, or starved and given urecholine. All animals were sacrificed at varying intervals, and all of them showed acute pancreatitis at autopsy. Recent experiments with dogs[47, 52, 74] have shown that acute pancreatitis is the almost constant result of oral or parenteral administration of ethionine. Only in instances where minute amounts of the drug were used did acute pancreatitis not result.[52] In addition to acute pancreatitis, dogs fed ethionine developed yellow, fatty, friable livers which microscopically showed intense fatty infiltration.

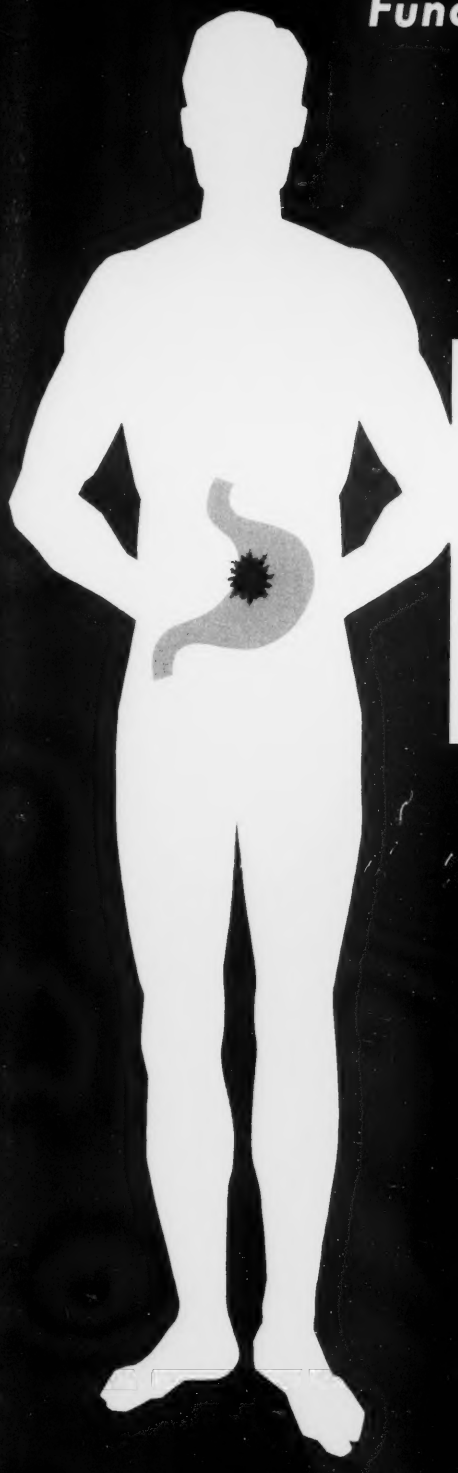
Both the pancreas and pancreatic juice contain a protein substance which is a specific trypsin inhibitor.[47, 53] In pancreatitis produced by feeding ethionine, the ratio of trypsin inhibitor to total protease is lowered in both the pancreatic tissue and the pancreatic secretions.[38] These findings suggest that the mechanisms of preventing activation of pancreatic juice are impaired in ethionine produced pancreatitis.

The experimental production of acute pancreatitis by the alteration of dietary intake provides another approach to the pathogenesis of this disease. Perhaps the frequent association of chronic alcoholism and acute pancreatitis may be partially explained on the basis of the dietary deficiency which is so often present in these patients.

Infection

Most authors agree that typical hemorrhagic pancreatitis may result from infection, but they also insist that such is a rare occurrence. In arguing against this route of spread, Wangensteen and co-workers[89] point out that acute pancreatitis is much less frequent in acute biliary tract infection than it is in chronic cholecystitis. Careful human anatomical dissection[51] failed to reveal any lymphatic connection between the gallbladder and the pancreas. Hematogenous spread from an infected focus has been reported,[30, 63] but such reports are extremely rare.

There are rather recent reports which tend to implicate Clostridium perfringens in the pathogenesis of some cases of this disease. It has been found, in dogs dying of acute pancreatitis,[70] that there was a marked increase in pancreatic bacteria, especially Clostridium perfringens. Tejerina-Fotheringham[85] identified this organism in the bile from the common bile ducts, in the urine, and in fragments of pancreas of patients with acute pancreatitis. He injected gallbladder bile[84] from a patient with acute pancreatitis into the pancreatic ducts of three dogs, producing acute pancreatitis in all three animals. Similar amounts of the same bile, autoclaved before injection, did not pro-



Functional and Organic Control

of PEPTIC ULCER

Gastro-Intestinal Irritability and Tension

MONODRAL®

with # MEBARAL®

TABLETS

Potent **ANTISECRETORY • ANTICHOLINERGIC • SEDATIVE**

Each tablet contains:

Monodral bromide	**5 mg.**
Mebaral	**32 mg.**

PROVIDES

Dependable control of hyperacidity and hypermotility. Spasmolysis. Prompt and prolonged pain relief. Tranquillity without drowsiness.

DOSE:

Peptic ulcer, 1 or 2 tablets three or four times daily. Other gastro-intestinal disorders, 1 tablet three or four times daily.

SUPPLIED: Bottles of 100 tablets.

Winthrop LABORATORIES
NEW YORK 18, N. Y.

Monodral (brand of penthienate) and Mebaral (brand of mephobarbital), trademarks reg. U.S. Pat. Off.

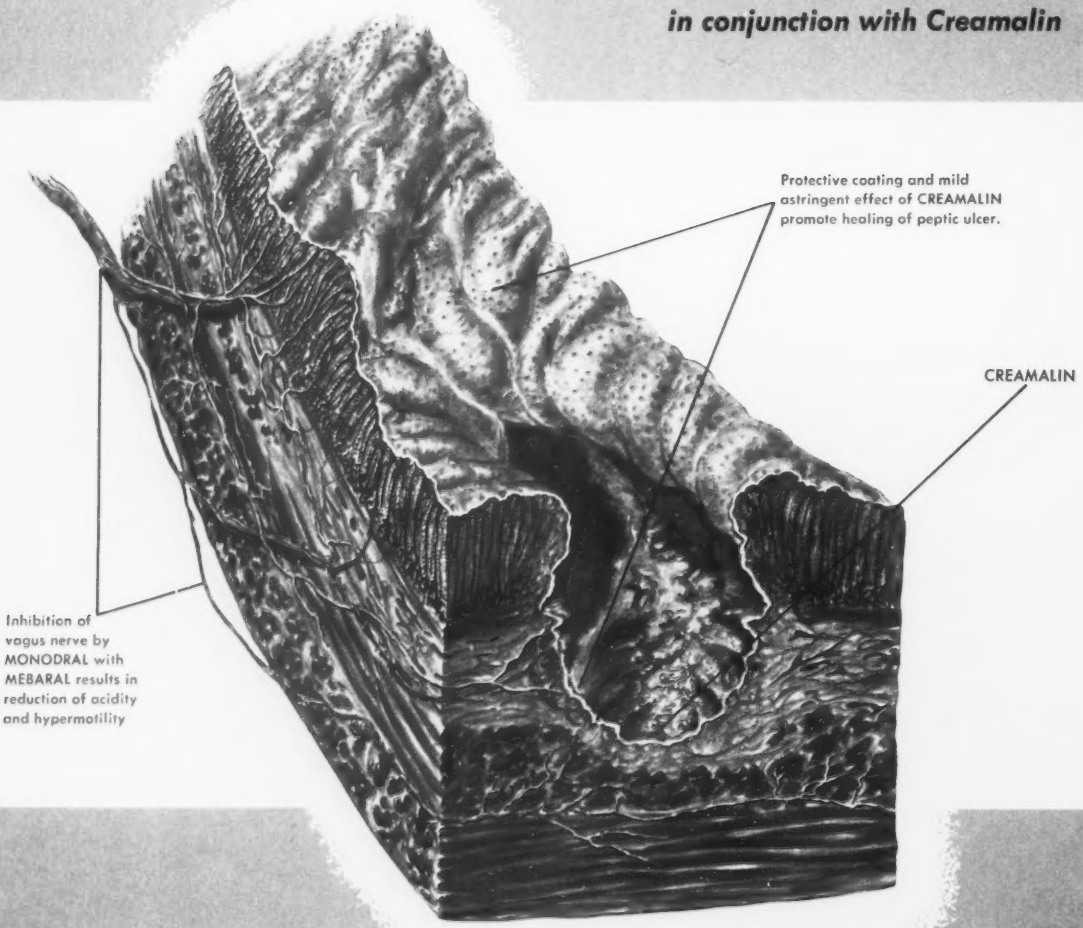
Protective Coating with Creamalin®

PIONEER ALUMINUM HYDROXIDE GEL

FAST ACTING REACTIVE GEL

For best results in PEPTIC ULCER

Prescribe Monodral®-Mebaral® tablets in conjunction with Creamalin


Protective coating and mild astringent effect of CREAMALIN promote healing of peptic ulcer.
CREAMALIN
Inhibition of vagus nerve by MONODRAL with MEBARAL results in reduction of acidity and hypermotility

DOSE:

From 2 to 4 teaspoonfuls Creamalin liquid or from 2 to 4 Creamalin tablets (well chewed) every two to four hours, with a small amount of water or milk.

Creamalin liquid — 8 and 16 fl. oz.
Creamalin tablets — bottles of 50 and 200.

Winthrop LABORATORIES
NEW YORK 18, N. Y.

Creamalin (brand of aluminum hydroxide gel), Monodral (brand of penthienate) and Mebaral (brand of mephobarbital), trademarks reg. U. S. Pat. Off.

assure her

a more serene, a happier pregnancy
. . . without nausea

give her **'MAREDOX'®** brand

Cyclizine Hydrochloride and Pyridoxine Hydrochloride

because 'Maredox' gives the expectant mother new-found relief from morning sickness.

relieves nausea and vomiting
and
counteracts pyridoxine deficiency
in pregnancy

One tablet a day, taken either on rising or at night, is all that most women require.

Each tablet of 'Maredox' contains:
'Marezine'® brand Cyclizine Hydrochloride..... 50 mg.
Pyridoxine Hydrochloride ..... 50 mg.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

duce pancreatitis in any of the three controls. He postulates that: (1) Acute pancreatitis is frequently the result of inflammatory reaction of the duodenal end of the common bile duct; (2) This inflammation reaches the site from the gallbladder; and (3) Clostridium perfringens is frequently the organism responsible for the chronic infection.

Mumps is occasionally complicated by mild edematous pancreatitis.[44] This was reported in 13 of 252 patients[14] in whom the diagnosis was made on clinical grounds alone. In mumps, serum amylase values are frequently elevated, even when symptoms of acute pancreatitis are absent. In patients with parotitis, Applebaum[4] found elevated serum amylase values in 84 per cent of 224 patients with mumps; however, only 12 per cent of this same group showed elevated serum lipase levels.

Acute pancreatitis, then, does occur as a complication of mumps. How frequent and how severe the disease is debatable because of the difficulty in interpreting elevated serum amylase levels, the mildness of the symptoms, and the rarity of fatalities. Elevated serum amylase and lipase levels have been noted also in infectious hepatitis.[21]

Impairment of Blood Supply

Experimentally, temporary occlusion of the gastroduodenal artery, when accompanied by obstruction of the pancreatic ducts, will lead to massive necrosis and hemorrhage into the pancreas of dogs.[72] Ligation of the cysterna chyla (to obstruct lymph drainage), temporary ligation of the portal vein, or ligation of the pancreatico-duodenal artery, plus obstruction of the pancreatic ducts, failed to produce pancreatitis in others of the same group of dogs. Adams and Musselman,[2] however, report that acute hemorrhagic pancreatitis, similar to that seen in man, can almost routinely be produced by inducing thrombosis of the pancreatic veins of dogs.

Mercury, injected into the arteries supplying the pancreas,[82] produced typical acute hemorrhagic pancreatitis in all of 21 dogs; and the degree of pancreatitis was not significantly altered by previous ligation of the pancreatic ducts or by administration of parasympathomimetic drugs. Injection of sterile paraffin into the superior pancreatico-duodenal artery of dogs produced typical acute hemorrhagic pancreatitis.[59] In the presence of ligated pancreatic ducts,[74] elevated serum amylase levels resulted from the injection of an oily emulsion into this artery.

Ischemia caused by arterial occlusion[52, 58, 59] and obstruction of venous return[82] are reported as the cause of death in a small percentage of human autopsy studies. It is probable that impairment of the blood supply is a factor in the etiology of acute pancreatitis; however, it undoubtedly accounts for an insignificant number of cases.

Miscellaneous Etiological Factors

Pancreatitis was observed in three children who died of diabetic acidosis.[44] It has been reported in patients who ultimately died from trauma incident to electric shock.[37]

Recent interesting and possibly significant studies on the etiology of acute hemorrhagic pancreatitis suggest that allergic phenomena may play a role in the production of this disease. It was observed by Thal and Brackney[87] that there was striking similarity between the vascular lesions of the dermal Schwartzman reaction and the lesion in acute hemorrhagic pancreatitis.

In an effort to evaluate the role of primary vascular sensitization, they perfused the pancreatic duct of rabbits with either Meningococcus or Escherichia coli toxin. The latter was a strain found in a routine human stool culture. Minute amounts of saline (.2 cc.) containing the bacterial toxins were injected into the ligated pancreatic ducts. Most of the animals were alert and eating well in 24 hours. At the end of this 24-hour period, the Schwartzman reaction was induced by the intravenous injection of 2 cc. of a 1:40 dilution of the same toxin. All rabbits were ill within three hours, and all died in from four to 24 hours after this injection. At autopsy, the only observation of note was severe diffuse hemorrhagic pancreatitis and disseminated areas of fat necrosis. In those controls in which either the sensitizing or the provocative dose was omitted, no gross or microscopic evidence of pancreatitis was noted at the end of 48 hours. By examining tissues, they noted close resemblance to human acute pancreatitis, both clinically and histologically. While it was evident that the lesion was vascular, they suggest that the fulminating destruction of the pancreas was enhanced by the action of trypsin and lipase liberated from the ischemic pancreas. These findings are of possible significance in relation to human acute pancreatitis by providing a mechanism whereby toxins or microscopic organisms present in the biliary or gastrointestinal tract may sensitize the pancreatic blood vessels.

Thal[86] recently reported the production of acute hemorrhagic pancreatitis by injection of foreign protein into rabbits previously sensitized to the protein. The animals were subjected to intravenous injection of a suspension of egg albumin; thereafter, intradermal injections were given at five-day intervals. This sensitization process was carried on for five to eight weeks until the intradermal injection of .5 cc. of the egg albumin resulted in gangrenous necrosis typical of the fully developed Arthus phenomenon. One week after the last intradermal injection, the same

optimal dosages for ATARAX,
based on thousands of case histories:

25 *mg. (t.i.d.)*

for these **25** *adult indications:*

TENSION SENILE ANXIETY MENOPAUSAL SYNDROME ANXIETY PREMENSTRUAL TENSION
PHOBIA HYPOCHONDRIASIS TICS FUNCTIONAL G. I. DISORDERS PRE-OPERATIVE ANXIETY
HYSTERIA PRENATAL ANXIETY · AND ADJUNCTIVELY IN CEREBRAL ARTERIOSCLEROSIS
PEPTIC ULCER HYPERTENSION COLITIS NEUROSES DYSPNEA INSOMNIA
PRURITIS ASTHMA ALCOHOLISM DERMATITIS PARKINSONISM PSORIASIS

perhaps the safest ataraxic known

PEACE OF MIND **ATARAX**®
(BRAND OF HYDROXYZINE)
Tablets-Syrup

10 *mg. (t.i.d.)*

for these **10** *pediatric indications*

ANXIETY TICS HOSTILITY NIGHTMARES HYPEREMOTIVITY RESTLESSNESS
TEMPER TANTRUMS HOSPITAL FEAR · AND ADJUNCTIVELY IN ASTHMA ENURESIS

Consider these 3 ATARAX *advantages:*

- 9 of every 10 patients get release from tension, without mental fogging
- extremely safe—no major toxicity is reported
- flexible medication, with tablet and syrup form

Supplied:

In tiny 10 mg. (orange) and 25 mg. (green) tablets, bottles of 100.

ATARAX Syrup, 10 mg. per tsp., in pint bottles.
Prescription only.

Rx ROERIG
CHICAGO 11, ILLINOIS

amount of standard albumin solution was injected into the ligated pancreatic ducts under controlled low pressure. Those animals which survived were sacrificed at the end of 48 hours.

At autopsy, seven of eight animals showed extensive miliary areas of fat necrosis and numerous large two- to eight-mm. areas where the normal finely reticular structure of the pancreas was transformed into a structureless swollen coagulum. Gross hemorrhage was visible in four of the eight animals. Capillaries and venules, in and about the areas of pancreatic necrosis, were occluded by hyalin thrombi. Control animals which were injected with autoclaved albumin showed only mild pancreatic edema. Those animals which were subjected to the intraductal injection of albumin at the time when intradermal injection produced only redness and swelling, developed less severe degrees of pancreatitis. Thus, the damage to pancreatic tissue was somewhat proportional to the degree of sensitization to protein which was injected into the pancreatic ducts.

It is unfortunate that Thal did not inject albumin into the pancreatic ducts of nonsensitized animals, for without such controls any results can be only suggestive. He concludes that the only inference which may be made is that small vessel thrombosis may be a precipitating mechanism in some cases of acute pancreatitis. These experiments do offer another line of approach in determining the etiology of acute pancreatitis.

Ackerman[1] reported a single case in which the cause of fatal acute pancreatitis was most likely transfusion with incompatible blood. Powers, Brown, and Stein[73] produced small foci of localized hemorrhage in the pancreas of dogs by injection of pure trypsin into the pancreatico-duodenal artery of dogs. When the pancreatic duct was ligated, the injection of the same amount of trypsin resulted in widespread hemorrhagic pancreatitis. This study suggests that obstruction of the ducts increased the amount of trypsinogen in the pancreas and that activation of this trypsinogen by trypsin resulted in extensive destruction of the parenchyma.

Summary

Experimental studies indicate that, when a common channel is established and outflow is obstructed, bile pigment is found in the pancreatic ducts and active trypsin is present in the gallbladder. In the presence of obstruction of the common duct, and even in the absence of such obstruction, cholangiographic studies in human subjects show a flow of radiopaque media into the pancreatic ducts. It seems apparent, however, that obstruction of outflow alone will not produce acute pancreatitis except in rare instances. Reflux of bile into, or the actual flow of bile through the pancreatic ducts, under physiological pressures, may produce minute foci of infection but usually will not produce acute pancreatitis.

One of the reasons for the great popularity of the common channel theory was the knowledge that bile would activate trypsinogen or trypsin. Now there is good evidence that trypsinogen may be activated by pancreatic tissue juice, enterokinase, KCl, and calcium. Thus, trypsinogen activation is probably easily accomplished even in the absence of bile in the pancreatic ducts.

Experimentally, stimulation of pancreatic secretion in the presence of ligated pancreatic ducts will almost routinely produce acute pancreatitis; however, either procedure alone will usually result in no more than mild pancreatic edema or isolated focal lesions. It is likely, then, that any lesion or situation which results in obstruction of outflow of pancreatic juices in the presence of active secretion may lead to increased amounts of pancreatic enzymes in contact with pancreatic tissue. Activation of these enzymes would logically result in hemorrhagic pancreatitis. The actual mechanism of activation of these enzymes is unknown. Two of the most plausible postulations are: (1) Increased pressure within the duct system of the pancreas, causing rupture of the ductules with resultant release of trypsin into the pancreatic tissue; and (2) Trypsin is released into the blood stream.

One can list the possible causes of obstruction of outflow of pancreatic secretion, such as pancreatic calculi and spasm or obstruction of the sphincter of Oddi in those patients with a common channel. The etiology of spasm of the sphincter has been attributed to acid in the duodenum, parasympathomimetic agents including morphine, severe pain, and emotional strain. The sphincter may be obstructed by edema, inflammation, calculi, and neoplastic growths. There is considerable suggestive evidence that secretion of the pancreas is induced by vagal stimulation, injection of parasympathomimetic agents, injection of secretin, the feeding of heavy meals, and the ingestion of alcohol.

It is established that there is an increased incidence of acute pancreatitis in the presence of acute and chronic alcoholism. It has been suggested also that alcohol stimulates pancreatic secretion and that it stimulates acid secretion in the stomach. Acid chyme may precipitate spasm of the sphincter of Oddi. Whether this occurs in alcoholic patients is not known, but it remains as a distinct possibility. Gastroduodenitis is also a reported result of alcoholism and a cause of spasm of the sphincter of Oddi. Thus, in one agent (alcohol), both prerequisites for acute pancreatitis are probably present; i.e., obstruction of outflow and stimulation of secretion.

The role of infection is not completely understood;

In Angina Pectoris *More Comprehensive Action*

Pentoxylon®

The patient with angina pectoris requires the comprehensive approach provided by the several actions of Pentoxylon. Each tablet combines the valuable *tranquilizing, fear-relieving, bradycrotic,* and *nonsoporific sedative* actions of Rauwiloid® (alseroxylon, 0.5 mg.), with the *long-lasting coronary vasodilating* effect of pentaerythritol tetranitrate (PETN, 10 mg.).

- **Reduces incidence and severity of attacks**
- **Increases exercise tolerance**
- **Reduces tachycardia**
- **Reduces anxiety, allays apprehension**
- **Reduces nitroglycerin need**
- **Lowers blood pressure only in hypertensives**
- **Produces demonstrable ECG improvement**

Dosage: one to two tablets q.i.d., before meals and on retiring

P.S. **to stop the acute attack faster**

Medihaler-Nitro™, the new self-propelled, measured-dose inhalation method delivers 1% octyl nitrite for instantaneous relief of acute anginal pain.

Riker LOS ANGELES

NEW...

Each Multiple Compressed Tablet of MEPROLONE provides the inseparable antiarthritic, antirheumatic benefits of:

1. *Prednisolone buffered*—the newest and most potent of the "predni-steroids" for prompt relief of joint pain and arrest of the destructive inflammatory process.

2. *Meprobamate*—the newest and safest of the muscle-relaxant tranquilizers for profound relaxation of skeletal muscle in spasm.

Tolerance to this combination is good because there is little likelihood of sodium retention, potassium depletion or gastric distress with buffered prednisolone, and meprobamate rarely produces significant side effects in therapeutic dosage.

An additional important therapeutic benefit, often overlooked, stems from the tranquilizing action of meprobamate. This component of MEPROLONE relieves mental tension and anxiety so often manifest in arthritics, making them more amenable to other rehabilitation measures.

INDICATIONS: A wide variety of conditions, in which four symptoms predominate: *a*) inflammation *b*) muscle spasm *c*) anxiety and tension *d*) discomfort and disability; i.e., rheumatoid arthritis, rheumatoid spondylitis (Marie-Strümpell disease), Still's disease, psoriatic arthritis, osteoarthritis, bursitis, synovitis, tenosynovitis, myositis, fibrositis, fibromyositis, neuritis, acute and chronic low back pain, acute and chronic primary and secondary fibrositis and torticollis, intractable asthma, respiratory allergies, allergic and inflammatory eye and skin disorders (as maintenance therapy in disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis and scleroderma).

Therapeutic benefits of MEPROLONE compared with traditional antiarthritics.

	relieves pain	suppresses inflammation	relaxes muscle	eases anxiety	imparts sense of well-being
Salicylates	✓	✓			
Muscle relaxants			✓[1]		
Tranquilizers				✓[1]	
Steroids	✓	✓			✓
MEPROLONE	✓	✓	✓	✓	✓

1. Meprobamate is the only tranquilizer with muscle-relaxant action.

SUPPLIED: Multiple Compressed Tablets in bottles of 100 in two formulas as follows: MEPROLONE-1—1.0 mg. of prednisolone, 200 mg. of meprobamate and 200 mg. of dried aluminum hydroxide gel. MEPROLONE-2—provides 2.0 mg. of prednisolone in the same formula.

NO OTHER

ANTIRHEUMATIC

PRODUCT

PROVIDES AS MANY

BENEFITS AS

MEPROLONE®

MEPRO PREDNISO | BAMATE LONE, *buffered*

THE ONLY

ANTIRHEUMATIC,

ANTIARTHRITIC

THAT SIMULTANEOUSLY

RELIEVES:

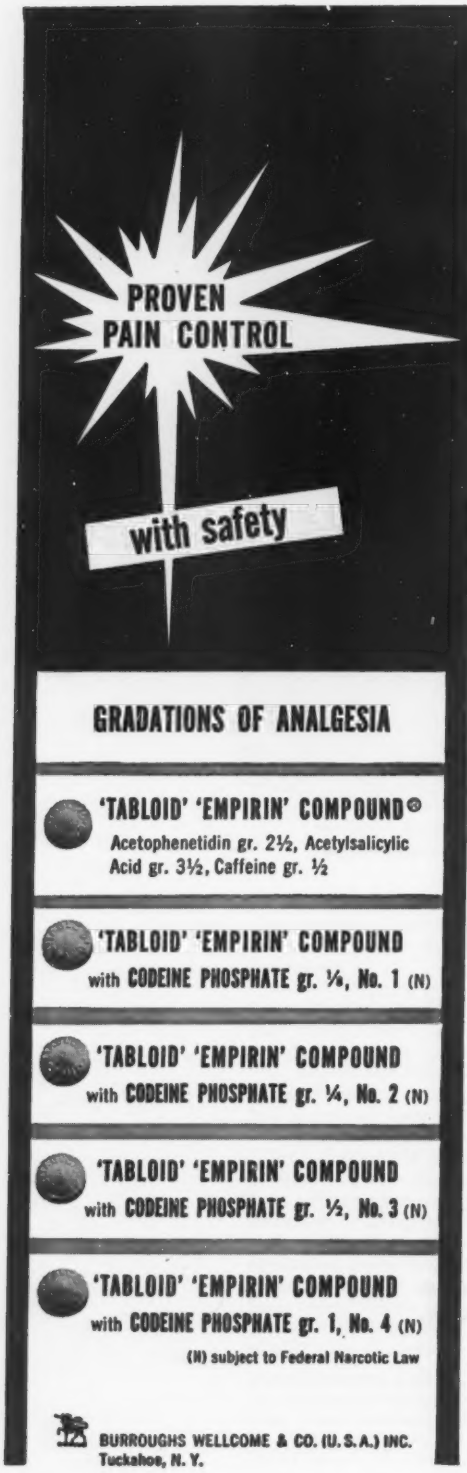
1. MUSCLE SPASM
2. JOINT INFLAMMATION
3. ANXIETY AND TENSION
4. DISCOMFORT AND DISABILITY

MSD

MERCK SHARP & DOHME

DIVISION OF MERCK & CO., INC. PHILADELPHIA 1, PA.

®MEPROLONE is the trade-mark of Merck & Co., Inc.


PROVEN
PAIN CONTROL
with safety
GRADATIONS OF ANALGESIA
'TABLOID' 'EMPIRIN' COMPOUND®
Acetophenetidin gr. 2½, Acetylsalicylic Acid gr. 3½, Caffeine gr. ½
'TABLOID' 'EMPIRIN' COMPOUND
with CODEINE PHOSPHATE gr. ¼, No. 1 (N)
'TABLOID' 'EMPIRIN' COMPOUND
with CODEINE PHOSPHATE gr. ¼, No. 2 (N)
'TABLOID' 'EMPIRIN' COMPOUND
with CODEINE PHOSPHATE gr. ½, No. 3 (N)
'TABLOID' 'EMPIRIN' COMPOUND
with CODEINE PHOSPHATE gr. 1, No. 4 (N)
(N) subject to Federal Narcotic Law
BURROUGHS WELLCOME & CO. (U.S.A.) INC.
Tuckahoe, N. Y.

however, it is known that more than one-third of the cases of acute pancreatitis occur in the presence of cholecystitis. In addition, acute pancreatitis occurs more frequently with chronic than with acute cholecystitis. The works of one investigator suggest that Clostridium perfringens may gain access to the pancreatic tissue by way of the biliary flow, in instances of a common duct, and give rise to acute pancreatitis.

Experimentally, temporary or permanent interruption of blood supply to, or impairment of venous return from the pancreas has resulted in acute pancreatitis. Clinically, there are a few reports of autopsy studies in which this disease has been attributed to these factors. The work of Thal and Brackney, in which sensitization of pancreatic tissue to bacterial toxins and foreign proteins resulted in small vessel thrombosis, gives suggestive evidence as to the potentiality of the vascular factor in the etiology of this disease.

Experimental production of pancreatitis by the feeding of high fat-low protein diets and by the feeding of ethionine suggests that diet may be a factor in the production of acute pancreatitis. The observation that there is diminished trypsin inhibitor in pancreatic juice of ethionine-fed animals may ultimately prove to be significant. These studies provide the implication that, in an artificially-produced dietary deficiency (feeding ethionine, a direct antagonist of methionine), the defense mechanisms of the pancreas are compromised. If this occurs in the presence of methionine deficiency, it is likely that it may occur in high fat-low protein diets and in chronic alcoholism.

In the vast majority of cases of acute pancreatitis it is apparent that biliary tract disease and over-indulgence in alcohol are probably the etiological factors. It seems obvious, also, that there is probably a great variety of etiological factors in this disease. It would appear that the vascular and metabolic components of etiology deserve further investigation.

Bibliography

1. Ackerman, L. V.: Acute pancreatitis following blood transfusion, Arch. Path. 34:1065-1069 (Dec.) 1942.
2. Adams, T. W., and Musselman, M. M.: Pancreatic venous thrombosis as an etiologic factor in acute necrotizing pancreatitis, Surg. Forum—Clin. Cong. Am. Coll. Surg. 4:401-406, 1953.
3. Anrep, G. V.: The influence of the vagus on pancreatic secretion, II., J. Physiol. 50:421-433 (Dec. 15) 1916.
4. Applebaum, I. L.: Serum amylase in mumps, Ann. Int. Med. 21:35-43 (July) 1944.
5. Archibald, E.: Experimental production of pancreatitis in animals as a result of resistance of the common duct sphincter, Surg., Gynec. & Obst. 28:529-545 (June) 1919.
6. Babkin, B. P.: Secretory mechanisms of the digestive glands, New York, Paul B. Hoeber, Inc., 1950, Chap. 20.
7. Balo, J., and Ballon, H. C.: Effect of retention of pancreatic secretion, Surg., Gynec. & Obst. 48:1-13 (Jan.) 1929.

8. Basset, J. H.: Duodenal diverticula with especial reference to diverticula associated with pancreatic and biliary ducts, Tr. Chicago Path. Soc. 7:83-94 (Dec.) 1907.

9. Bayliss, W. M., and Starling, E. H.: The mechanism of pancreatic secretion, J. Physiol. 28:325, 1902. Quoted in: Evans, C. L.: Starling's Human Physiology, ed. II, Philadelphia, Lea & Febiger, 1952, p. 886.

10. Bennett, I. L.; Nation, T. C., and Olley, J. F.: Pancreatitis in methyl alcohol poisoning, J. Lab. & Clin. Med. 40:405-409 (Sept.) 1952.

11. Block, M. A.; Wakin, K. G., and Bagenstoss, A. H.: Experimental studies concerning factors in the pathogenesis of acute pancreatitis, Surg., Gynec. & Obst. 99:83-90 (July) 1954.

12. Bockus, H. L.; Boguch, A., and Roth, J. L. A.: Acute pancreatitis—diagnosis and treatment, South. Med. J. 46:388-396 (Apr.) 1953.

13. Bockus, H. L.; Kalser, M. H.; Roth, J. L. A.; Boguch, A. L., and Stein, G.: Clinical features of acute inflammation of the pancreas, Arch. Int. Med. 96:308-321 (Sept.) 1955.

14. Brahdy, M. B., and Scheffer, I. H.: Pancreatitis complicating mumps, Am. J. M. Sc. 181:255:260 (Feb.) 1931.

15. Brooks, F. P., and Thomas, J. E.: The effects of alcohol on canine external pancreatic secretion, Gastroent. 23:36-39 (Jan.) 1953.

16. Cameron, A. L., and Noble, J. F.: Reflux of bile up the duct of Wirsung caused by an impacted biliary calculus, J.A.M.A. 82:1410-1414 (May 3) 1924.

17. Caudell, S., and Wheelock, M. C.: Serum amylase and serum lipase in mumps, Ann. Int. Med. 25:88-96 (July) 1946.

18. Coffey. R. J.: Unusual features of acute pancreatic disease, Ann. Surg. 135:715-720 (May) 1952.

19. Coffey, R. J.; Barnes, E. B.; Reed, P., and Brandt, F. B.: Diagnosis and treatment of acute pancreatic disease, Postgrad. Med. 8:191-196 (Sept.) 1950.

20. Crittendon, P. J., and Ivy, A. C.: The nervous control of pancreatic secretion in the dog, Am. J. Physiol. 119:724-733 (Aug.) 1937.

21. Cummins, A. J., and Bockus, H. L.: Abnormal serum pancreatic enzyme values in liver disease, Gastroent. 18:518-529 (Aug.) 1951.

22. Dardinski, V. J.: Hemorrhagic pancreatitis—report of two cases in which gallstones could not be considered essential etiological factors. Am. J. Path. 7:169-174 (Mar.) 1931.

23. DeAlmeida, A. L., and Grossman, M. I.: Experimental production of pancreatitis with ethionine, Gastroent. 20:554-577 (Apr.) 1952.

24. Doubilet, H.: Pancreatic reflux deliberately produced, Surg., Gynec. & Obst. 84:710-715 (Apr.) 1947.

25. Doubilet, H., and Mulholland, J. H.: Etiology and treatment of pancreatitis, New York State J. Med. 49:2938-2944 (Dec. 15) 1949.

26. Dragstedt, L. R.; Haymond, H. E., and Ellis, J. C.: Pathogenesis of acute pancreatitis (acute pancreatic necrosis), Arch. Surg. 28:232-285 (Feb.) 1934.

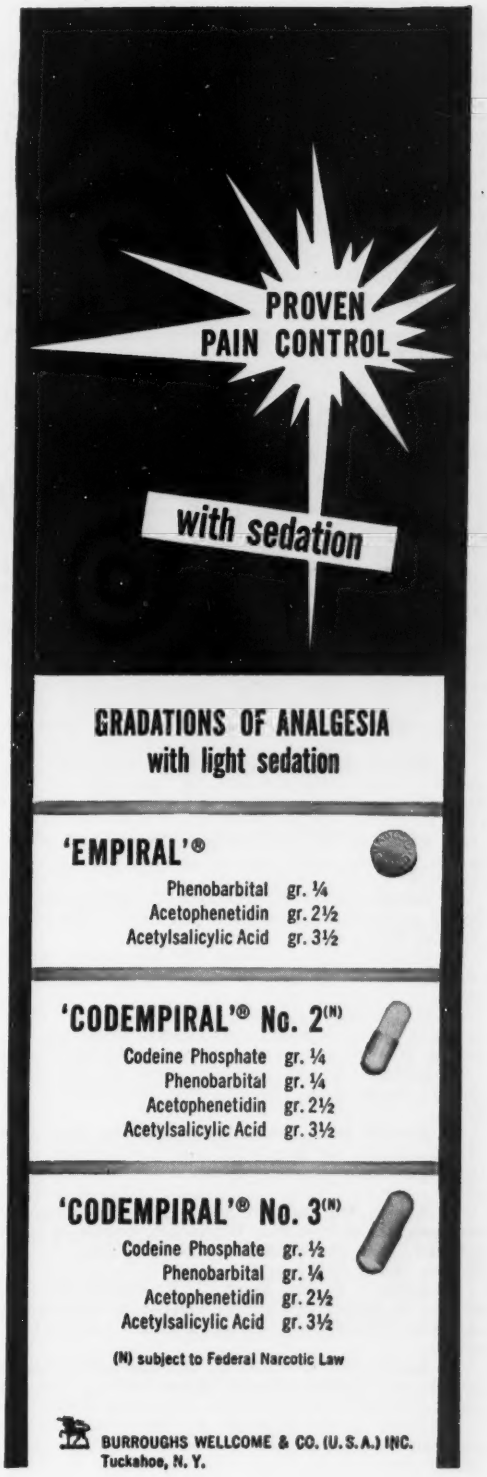
27. Drieling, D. A.; Richman, A., and Fradkin, N. F.: The role of alcohol in the etiology of pancreatitis—a study of the effect of intravenous alcohol in external secretion of the pancreas, Gastroent. 20:636-646 (Apr.) 1952.

28. Dunphy, J. E.; Brooks, J. R., and Achroyd, F.: Acute postoperative pancreatitis, New Eng. J. Med. 248:445-451 (Mar. 12) 1953.

29. Edmondson, H. A.; Berne, C. J.; Homann, R. E., and Wertman, M.: Calcium, potassium, magnesium and amylase disturbances in acute pancreatitis, Am. J. Med. 12:34-42 (Jan.) 1952.

30. Egdahl, A.: A review of 105 reported cases of acute pancreatitis with special reference to etiology—a report on two cases, Bull., Johns Hopkins Hosp. 18:130-138 (Apr.) 1907.

31. Elman, R.: Surgical aspects of acute pancreatitis, J.A.M.A. 118:1265-1268 (Apr. 11) 1942.



32. Fallis, L. S.: Acute pancreatitis, Proc. Roy. Soc. Med. 46:113-115 (Feb.) 1953.

33. Fallis, L. S., and Plain, G.: Acute pancreatitis, Surg. 5:358-373 (Mar.) 1939.

34. Farber, E., and Popper, H.: Production of acute pancreatitis with ethionine and its prevention with methionine, Proc. Soc. Exper. Biol. & Med. 74:838-840 (Aug.) 1950.

35. Fitz, R.: Acute pancreatitis—a consideration of pancreatic hemorrhage, hemorrhagic suppurative and gangrenous pancreatitis and of disseminated fat necrosis, Med. Rec. 35:197-204 (Feb. 23) 1889.

36. Gardner, C. E., Jr., and Fawcett, B.: Acute pancreatitis with hyperlipemia, Surg. 27:512-519 (Apr.) 1950.

37. Glaser, A. M.: Pancreatic necrosis in electric shock, Arch. Path. 39:9-10 (Jan.) 1945.

38. Grossman, M. I.: Experimental pancreatitis, Arch. Int. Med. 96:298-307 (Sept.) 1955.

39. Grossman, M. I.; Greengard, H., and Ivy, A. C.: The effect of dietary composition on pancreatic enzymes, Am. J. Physiol. 138:676-682 (Mar.) 1943.

40. Harper, A. A., and Raper, H. S.: Pancreozymin, a stimulant of the secretion of pancreatic enzymes in extracts of the small intestine, J. Physiol. 102:115-125 (June) 1943.

41. Hicken, N. F., and McAllister, A. J.: Is the reflux of bile into the pancreatic ducts a normal or abnormal physiological process? Am. J. Surg. 83:781-786 (June) 1952.

42. Howell, C. W., and Bergh, G. S.: Pancreatic duct filling during cholangiography—its effect upon serum amylase levels, Gastroent. 16:309-323 (Oct.) 1950.

43. Ireneus, C.: Experimental bile pancreatitis, Arch. Surg. 42:126-140 (Jan.) 1941.

44. Ivy, A. C., and Gibbs, G. E.: Pancreatitis—a review, Surg. 31:614-642 (Apr.) 1952.

45. Ivy, A. C.: Motor dysfunction of the biliary tract—an analytical and critical consideration, Am. J. Roentgenol. 57:1-11 (Jan.) 1947.

46. Johnstone, O. P.: Four cases of hemorrhagic pancreatitis in which the common bile ducts and pancreatic ducts had separate openings, Colorado Med. 4:93-103 (Mar.) 1907.

47. Kalser, M. H., and Grossman, M. I.: Pancreatic secretion in dogs with ethionine-induced pancreatitis, Gastroent. 26:189-198 (Feb.) 1954.

48. Kennedy, R. L. J., and Collet, R. W.: Chronic relapsing pancreatitis and hyperlipemia, Am. J. Dis. Child. 78:80-87 (July) 1949.

49. Klatskin, G., and Gordon, M.: Relationship between relapsing pancreatitis and essential hyperlipemia, Am. J. Med. 12:3-23 (Jan.) 1952.

50. Koch-Weser, D., and Popper, H.: Hepatic fibrosis produced by chronic ethionine feeding, Proc. Soc. Exp. Biol. & Med. 79:34-36 (Jan.) 1952.

51. Kodama, S.: The lymphatics of the extrahepatic biliary passages, Surg., Gynec. & Obst. 43:140-146 (Aug.) 1926.

52. Krobath, F. J., and Hallenbeck, G. A.: Some effects of ethionine in the dog, with particular reference to external pancreatic secretion, Gastroent. 27:743-754 (Dec.) 1954.

53. Kunitz, M., and Northrup, J. H.: Isolation from beef pancreas of crystalline trypsinogen, trypsin, a trypsin inhibitor and an inhibitor-trypsin compound, J. Gen. Physiol. 19:991 (July) 1936.

54. Layne, J. A., and Bergh, G. S.: Experimental study of pain in human biliary tract induced by spasm of the sphincter of Oddi, Surg., Gynec. & Obst. 70:18-30 (Jan.) 1940.

55. Lindsay, S.; Enterman, C., and Chaikoff, I. L.: Pancreatitis accompanying hepatic disease in dogs fed high fat, low protein diets, Arch. Path. 45:635-638 (Oct.) 1948.

56. Lium, R., and Maddock, S.: The etiology of acute pancreatitis—an experimental study, Surg. 24:593-604 (Oct.) 1948.

57. Longmire, W. P.: Discussion of "the effect of bile flow thru the pancreas" by Whitrock, R. M.; Hine, D.; Crane, J., and McCorkle, H. J., Surg. 38:130-131 (July) 1955.

58. Lynch, K. M.: Pancreatitis—an analysis of types and causes, Ann. Int. Med. 14:628-640 (Oct.) 1940.

59. MacKenzie, W. C.: Pancreatitis, Ann. Roy. Coll. Surg. 15:220-235 (Oct.) 1954.

60. Mahaffey, J. H., and Haynes, B. W.: Observations on pancreatic juice in a case of external pancreatic fistula in man, Am. Surg. 19:174-181 (Feb.) 1953.

61. Mahaffey, J. H., and Howard, J. M.: The incidence of postoperative pancreatitis, Arch. Surg. 70:348-352 (Mar.) 1955.

62. Mann, F. C., and Giordano, A. S.: The bile factor in pancreatitis, Arch. Surg. 6:1-30 (Jan.) 1923.

63. McWhorter, G. L.: Acute pancreatitis—report on sixty-four cases, Arch. Surg. 25:956-990 (Nov.) 1932.

64. Meyers, S. G.; Brown, J. R.; Boone, R., and Henderson, H.: Clinical manifestations of pancreatitis, Gastroent. 28:803-809 (May) 1955.

65. Millbourn, E.: On acute pancreatic affections following gastric resection for ulcer or cancer and the possibilities of avoiding them, Acta Chir. Scandinav. 98:1-21, 1949.

66. Mirizzi, P. L.: Functional disturbance of the choledochus and hepatic bile ducts, Surg., Gynec. & Obst. 74:306-318 (Feb.) 1942.

67. O'Brien, J. J., and Thayer, T. R.: Pancreatitis—observations on 131 patients, New Eng. J. Med. 253:355-360 (Sept.) 1955.

68. Opie, E. L.: The etiology of acute hemorrhagic pancreatitis, Bull. Johns Hopkins Hosp. 12:182-188 (June) 1901.

69. Opie, E. L.: The relation of cholelithiasis to disease of the pancreas and to fat necrosis, Am. J. Med. Sc. 121:27-43 (Jan.) 1901.

70. Persky, L.; Schweinberg, F. B.; Jacobs, S., and Fine, J.: Aureomycin in experimental acute pancreatitis of dogs, Surg. 30:652-656 (Oct.) 1951.

71. Popper, H. L.: Enzyme studies in edema of the pancreas and acute pancreatitis, Surg. 7:566-570 (Apr.) 1940.

72. Popper, H. L.; Necheles, H., and Russell, K. C.: Transition of pancreatic edema into pancreatic necrosis, Surg., Gynec. & Obst. 87:79-82 (July) 1948.

73. Powers, S. R., Jr.; Brown, H. H., and Stein, A.: The pathogenesis of acute and chronic pancreatitis, Ann. Surg. 142:690-695 (Oct.) 1955.

74. Radakovich, M.; Pearse, H. E., and Strain, W. H.: Study of the etiology of acute pancreatitis, Surg., Gynec. & Obst. 94:749-760 (June) 1952.

75. Ravdin, I. S., and Johnson, C. G.: The etiology and pathogenesis of acute hemorrhagic pancreatitis, Am. J. Med. Sc. 205:277-301 (Mar.) 1943.

76. Reinoff, W. F., Jr., and Pickrell, K. L.: Pancreatitis—and anatomic study of the pancreatic and extrahepatic biliary systems, Arch. Surg. 51:205-219 (Nov.-Dec.) 1945.

77. Rich, A. R., and Duff, L. D.: Experimental and pathological studies on the pathogenesis of acute hemorrhagic pancreatitis, Bull. Johns Hopkins Hosp. 58:212-260, 1936.

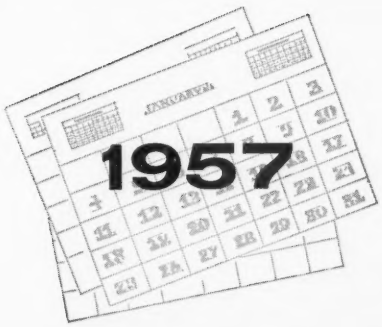
78. Schmeiden, V., and Sebening, W.: Surg., Gynec. & Obst. 46:735-751 (June) 1928.

79. Schweinberg, F.; Jacobs, S.; Persky, L., and Fine, J.: Further studies on the role of bacteria in death from acute pancreatitis in dogs, Surg. 33:367-369 (Mar.) 1953.

80. Sensenig, D. M., and Bowers, R.: Retrograde pancreaticoenterostomy in experimental pancreatitis, Surg. 38:113-121 (July) 1955.

81. Simpkins, S.: Variations in the pancreatic ducts and the minor duodenal papilla, Am. J. Med. Sc. 182:627-639 (Oct.) 1931.

82. Smyth, C. J.: Etiology of acute hemorrhagic pan-



for faster and higher

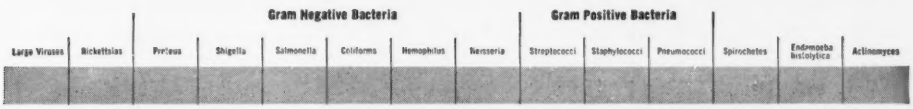
initial tetracycline blood levels

now...the new phosphate complex of tetracycline

SUMYCIN

Squibb Tetracycline Phosphate Complex

the broad **clinical** spectrum of SUMYCIN against pathogenic organisms



SUMYCIN
the new **phosphate complex** of tetracycline

SUMYCIN
a **single** antibacterial antibiotic

SUMYCIN
a **well tolerated** antibiotic

SUMYCIN
a **true** broad spectrum antibiotic

Minimum adult dose: 1 capsule q.i.d.
Each Sumycin capsule contains the equivalent of 250 mg. tetracycline hydrochloride.
Bottles of 16 and 100.

SQUIBB *Squibb Quality—the Priceless Ingredient*

"SUMYCIN" IS A SQUIBB TRADEMARK

creatitis with special reference to vascular factors, Arch. Path. 30:651-669 (Sept.) 1940.

83. Straus, F. H.: Inflammatory lesions of the pancreas, S. Clin. North Am. 35:107-118 (Feb.) 1955.

84. Tejerina-Fotheringham, V.: Acute pancreatitis—pathophysiology and treatment, Gastroent. 10:687-696 (Apr.) 1948.

85. Tejerina-Fotheringham, V.: Pathogenesis of acute pancreatitis, Prensa Med. Argent. 30:1035-1084 (June) 1943. Abstracted in J.A.M.A., 123:869 (Nov. 27) 1943.

86. Thal, A.: Studies on pancreatitis, II. Acute pancreatic necrosis produced experimentally by the arthus sensitization reaction, Surg. 37:911-917 (June) 1955.

87. Thal, A., and Brackney, E.: Acute hemorrhagic pancreatic necrosis produced by local Schwartzman reaction, J.A.M.A. 155:569-574 (June 5) 1954.

88. Thistlewaite, J. R., and Hill, R. P.: Serum amylase levels in acute pancreatitis, Surg. 31:495-501 (Apr.) 1952.

89. Wangensteen, O. H.; Leven, N. L., and Manson, M.: Acute pancreatitis (pancreatic necrosis)—an experimental and clinical study with special reference to the significance of the biliary tract factor, Arch. Surg. 23:47-73 (July) 1931.

90. Warren, K. W.: Management of pancreatic injuries, S. Clin. North Am. 31:789-792 (June) 1951.

91. Warren, K. W.: Pancreatic considerations in gastric surgery, J.A.M.A. 154:803-810 (Mar. 6) 1954.

92. Werner, J.; Simon, M. A., and Hoff, H. E.: Production of acute pancreatitis in dogs by the administration of mecholyl, Gastroent. 15:125-130 (May) 1950.

93. Whitrock, R. M.; Hine, D.; Crane, J., and McCorkle, H. J.: The effect of bile flow through the pancreas, Surg. 38:122-130 (July) 1955.

94. Zollinger, R. M.: Pancreatitis—diagnostic clinic, Postgrad. Med. 15:323-333 (Apr.) 1954.

ANNOUNCEMENTS

Third biennial course in occupational skin problems, October 28-November 1, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda, Cincinnati 19, Ohio.

Applications now being accepted (until September 1) for 1958 Part I examinations of American Board of Obstetrics and Gynecology. Information available from Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

Seventh American Congress on Maternal Care (formerly known as American Congress on Obstetrics and Gynecology), Palmer House, Chicago, July 8-12. Presented by American Committee on Maternal Welfare. Write 116 South Michigan Avenue, Chicago 3, Illinois.

Eleventh Annual Rocky Mountain Cancer Conference, Denver, July 10 and 11. Seven original papers, symposium on cancer of the stomach, symposium on cancer of the lung, panel on cytology, banquet and dance. Write John S. Bouslog, M.D., 835 Republic Building, Denver 2, Colorado.

Annual course in postgraduate gastroenterology, Somerset, Boston, October 24-26. Write American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

Midwest Cardiac Conference, Iowa State University Hospitals, Iowa City, October 3-5. Iowa Heart Association co-sponsor. No registration fee. Write 2100 Grand Avenue, Des Moines, Iowa.

One-week course in radiation for industrial physicians and lawyers, University of Cincinnati, September 9-14. Tuition $100, enrollment limited. Write Institute of Industrial Health, Kettering Laboratory, College of Medicine, University of Cincinnati, Cincinnati 19, Ohio.

Manuscript contest sponsored by Division of Obstetrics and Gynecology of United States Section, International College of Surgeons, deadline December 1, 1957. Details available from Dr. Harvey A. Gollin, 55 East Washington Street, Chicago 2, Illinois.

Fifth International Congress of Internal Medicine, Sheraton Hotel, Philadelphia, April 24-26, 1958. Write Edward R. Loveland, M.D., 4200 Pine Street, Philadelphia.

World Congress of Gastroenterology and 59th annual meeting, American Gastroenterological Association, Sheraton Park Hotel, Washington, D.C., May 25-31, 1958. Write H. M. Pollard, M.D., Secretary-General of Congress, University Hospital, Ann Arbor, Michigan.

To Promote Psychiatric Understanding

The American Psychiatric Association has announced plans to conduct a study of ways through which a greater understanding of psychiatry can be conveyed to physicians in general practice. The project was made possible by a grant from the National Committee against Mental Illness.

A liaison committee composed of representatives of that association and of the American Academy of General Practice will serve in an advisory capacity during the study.

AIR AMBULANCE

for your Patient's Convenience

When speed and comfort are essential, Central's air ambulance facilities are at your service.

WE FLY

Beechcraft exclusively—

THE WORLD'S SAFEST AIRPLANE.

Cot for bed-fast patients and comfort conditioned cabin. Seat for companion or registered nurse.

Two-way radio communication assures proper arrangements on arrival.

We fly on your schedule. Call us collect.

CENTRAL AIRCRAFT CHARTER SERVICE

MEMBER NATIONAL AIR TAXI CONFERENCE

MUNICIPAL AIRPORT PHONE 3-4129 TOPEKA, KANSAS

COUNTY SOCIETIES

ALLEN—President, Gerald B. Pees, M.D., Iola; Secretary, Eugene Myers, M.D., Iola.

ANDERSON—President, C. B. Harris, Jr., M.D., Garnett; Secretary, Robert L. Stevens, M.D., Garnett.

ATCHISON—President, Frank K. Bosse, M.D., Atchison; Secretary, Charles H. Young, M.D., Atchison.

BARTON—President, T. J. Brown, M.D., Hoisington; Secretary, C. B. Replogle, M.D., Great Bend.

BOURBON—President, J. R. Prichard, M.D., Fort Scott; Secretary, James J. Basham, M.D., Fort Scott.

BROWN—President, A. L. Nichols, M.D., Hiawatha; Secretary, R. T. Nichols, M.D., Hiawatha.

BUTLER—President, Benjamin E. White, M.D., El Dorado; Secretary, Ralph J. Metcalf, M.D., El Dorado; Executive Secretary, Gene Wilcox, 403 State Bank Building, Winfield.

CENTRAL KANSAS—President, Frank A. Dlabal, M.D., Wilson; Secretary, W. E. McAllaster, M.D., Russell.

CHASE—Secretary, Jacob Hinden, M.D., Strong City.

CHAUTAUQUA—President, Ivan E. Lloyd, M.D., Sedan; Secretary, W. K. Walker, M.D., Sedan.

CHEROKEE—Secretary, F. H. Jones, M.D., Columbus.

CLAY—Secretary, F. D. Taylor, M.D., Clay Center.

CLOUD—President, H. B. Stryker, M.D., Concordia; Secretary, M. C. Pearson, M.D., Concordia.

COFFEY—President, A. B. McConnell, M.D., Burlington; Secretary, Joseph W. Parker, Jr., M.D., Burlington.

COWLEY—President, E. D. Hinshaw, M.D., Arkansas City; Secretary, Jack V. Sharp, M.D., Arkansas City; Executive Secretary, Gene Wilcox, 403 State Bank Building, Winfield.

CRAWFORD—President, James H. Bena, M.D., Pittsburg; Secretary, Jack D. Walker, M.D., Girard.

DICKINSON—President, C. R. Svoboda, M.D., Chapman; Secretary, Dean C. Chaffee, M.D., Abilene.

DONIPHAN—Secretary, Robert L. Corder, M.D., Highland.

DOUGLAS—President, G. E. Manahan, M.D., Lawrence; Secretary, M. Erik Wright, M.D., Lawrence.

EDWARDS—President, R. E. Schnoebelen, M.D., Kinsley; Secretary, F. G. Meckfessel, M.D., Lewis.

ELK—Secretary, J. Gordon Claypool, M.D., Howard.

FINNEY— Secretary, H. M. Wiley, M.D., Garden City.

FORD—President, R. J. Ohman, M.D., Dodge City; Secretary, Arnold H. Baum, M.D., Dodge City.

FRANKLIN—President, J. E. Wallen, M.D., Ottawa; Secretary, David G. Laury, M.D., Ottawa.

GEARY—Secretary, R. M. Carr, M.D., Junction City.

GREENWOOD—President, John Basham, M.D., Eureka; Secretary, Robert L. Obourn, M.D., Eureka.

HARVEY—Secretary, Frances A. Allen, M.D., Newton.

IROQUOIS—President, J. H. McNickle, M.D., Ashland; Secretary, Ronald McCoy, M.D., Coldwater.

JACKSON—Secretary, Roy H. Moser, M.D., Holton.

JEFFERSON—Secretary, John K. Griffith, M.D., Valley Falls.

JEWELL—President, C. S. Hershner, M.D., Esbon; Secretary, R. M. Owensby, M.D., Mankato.

JOHNSON—President, R. C. Fairchild, M.D., Mission; Secretary, Wendell L. Good, M.D., Mission.

KINGMAN—President, R. E. Baldridge, M.D., Kingman; Secretary, G. E. Burket, Jr., M.D., Kingman.

LABETTE—President, H. V. Bair, M.D., Parsons; Secretary, R. E. Bartman, M.D., Parsons.

LEAVENWORTH—President, K. L. Graham, M.D., Leavenworth; Secretary, T. W. Graham, M.D., Leavenworth.

LYON—President, S. L. VanderVelde, M.D., Emporia; Secretary, C. H. Munger, M.D., Emporia.

McPHERSON—Secretary, E. C. Bransted, M.D., McPherson.

MARION—President, R. A. Barker, M.D., Peabody; Secretary, R. L. Krause, M.D., Goessel.

MARSHALL—President, D. M. Diefendorf, M.D., Waterville; Secretary, Robert M. Thomas, M.D., Marysville.

MEADE-SEWARD—President, Otto F. Prochazka, M.D., Liberal; Secretary, Harold E. Dittemore, Liberal.

MIAMI—President, William O. Appenfeller, M.D., Osawatomie; Secretary, Melvin L. Masterson, M.D., Louisburg.

MITCHELL—Secretary, J. F. Nienstedt, M.D., Beloit.

MONTGOMERY—President, William G. Chappuie, M.D., Independence; Secretary, Albert E. Bair, M.D., Independence.

MORRIS—Secretary, N. A. Burkett, M.D., Council Grove.

NEMAHA—Secretary, Virgil E. Brown, M.D., Sabetha.

NEOSHO—Secretary, Charles A. Campbell, M.D., Chanute.

NORTHWEST KANSAS—President, Carl Gun-

Wonderfully Simple...
Simply Wonderful!

Baker's Modified Milk is a complete infant food, easy to prescribe and prepare in hospital and home.

Available in liquid and powder forms, both are made *exclusively* from Grade A Milk (U.S.P.H.S. Milk Code). Both contain all requirements for *complete* infant nutrition.

Baker's Liquid — generally preferred for its greater ease of preparation.

Baker's Powder — particularly adaptable for feeding prematures and for use as complemental and supplemental feedings.

Both forms are extremely low in price, costing less than a penny per ounce of formula.

Furnished to hospitals without charge, of course.

Feeding Directions

BAKER'S MODIFIED MILK (Liquid)

NEWBORN INFANTS (Hospital)—1 part Baker's to 2 parts cool water.

FIRST WEEK AT HOME — 1 part Baker's to 1½ parts cool water.

AFTER FIRST WEEK AT HOME — 1 part Baker's to 1 part cool water.

Liquid Powder

BAKER'S MODIFIED MILK

THE BAKER LABORATORIES, INC.

Milk Products Exclusively for the Medical Profession

Main Office: Cleveland 3, Ohio • Plant: East Troy, Wisconsin

ter, M.D., Quinter; Secretary, John R. Neuenschwander, M.D., Hoxie.

OSAGE—Secretary, James L. Ruble, Jr., M.D., Overbrook.

OSBORNE—Secretary, J. E. Henshall, M.D., Osborne.

PAWNEE—President, S. T. Coughlin, M.D., Larned; Secretary, T. D. Ewing, M.D., Larned.

POTTAWATOMIE—President, E. W. Christmann, M.D., Wamego; Secretary, Orval L. Smith, M.D., St. Marys.

PRATT—President, V. W. Filley, M.D., Pratt; Secretary, F. G. Freeman, M.D., Pratt.

RENO—President, M. E. Nunemaker, M.D., Hutchinson; Secretary, A. C. Armitage, M.D., Hutchinson.

REPUBLIC—Secretary, Paul L. Beiderwell, M.D., Belleville.

RICE—Secretary, P. E. Beauchamp, M.D., Sterling.

RILEY—President, P. H. Hostetter, M.D., Manhattan; Secretary, J. Frank Hurdle, M.D., Manhattan.

RUSH-NESS—President, D. B. Parker, M.D., Ness City; Secretary, Kenneth McLain, M.D., Ransom.

SALINE—President, L. S. Nelson, Jr., M.D., Salina; Secretary, G. Sherman Ripley, M.D., Salina.

SEDGWICK—President, E. W. Crow, M.D., Wichita; Secretary, Ben H. Buck, Jr., M.D., Wichita; Executive Secretary, H. Martin Baker, 1102 South Hillside, Wichita.

SHAWNEE—President, C. S. Joss, M.D., Topeka; Secretary, James A. McClure, M.D., Topeka; Executive Secretary, Ray Selbach, 315 West Fourth, Topeka.

SMITH—President, F. H. Relihan, M.D., Smith Center; Secretary, Victor E. Watts, M.D., Smith Center.

STAFFORD—President, O. W. Longwood, M.D., Stafford; Secretary, C. Everett Brown, M.D., Stafford.

TRI-COUNTY—Secretary, Y. E. Parkhurst, M.D., Belle Plaine.

WASHINGTON—President, Lynn J. L'Ecuyer, M.D., Greenleaf; Secretary, L. L. Huntley, M.D., Washington.

WILSON—President, F. A. Moorhead, M.D., Neodesha; Secretary, C. E. Stevenson, M.D., Neodesha.

WOODSON—Secretary, H. A. West, M.D., Yates Center.

WYANDOTTE—President, Francis J. Nash, M.D., Kansas City; Secretary, William F. Roth, Jr., M.D., Kansas City.

BOOK REVIEWS

Medicine in Chicago, 1850-1950. By Thomas N. Bonner. Published by American History Research Center, Madison, Wisconsin. 302 pages. Price $5.00.

This book should be of intense interest to all Chicago physicians and also those whose medical education has been secured in a Chicago background. Many physicians are interested in the history of medicine, and many historians are also interested, although they lack a purely medical interest, but are fascinated by the social and economic aspects.

This volume concerns many most striking and interesting personalities who dominated the early medical scene, and it also includes mention of the social history, economic development, medical societies, medical education, and hospital growth in a great American city.

Dr. Bonner is now engaged in writing the medical history of Kansas, having been selected by the Department of History of the University of Kansas. He is being aided by a grant from the Kansas Medical Society.

A large number of Kansas physicians will be rewarded by reading this history of Chicago medicine and will feel well repaid and entertained.—*W.M.M.*

General Urology. By Donald R. Smith, M.D. Published by Lange Medical Publications, Los Altos, California. 328 pages. Price $4.50.

In his preface Dr. Smith states that the book is written primarily for the medical student and general practitioner. I agree that it would fulfill this function splendidly. However, it covers the field so well and contains so many simple practical basic, though oft forgotten, "gems" of physical diagnosis and management that it should be of interest to the specialist.

The book is remarkably free of padding and stereotyped antiquated concepts that mar some general texts. The illustrations are for the most part semi-diagrammatic, simple but effective, and easily grasped. The chapter on the neurogenic bladder is unusually good. In keeping with the times there is a chapter on psychosomatic urologic syndromes. It is of interest to note that the author is apparently not at all reluctant to refer resistant cases to the psychiatrist.

Appropos to the general aims of the text, surgical techniques are not discussed in any detail. The book stands the test of comparison with other texts in its field and in my opinion can be recommended without serious reservation.—*W.M.*

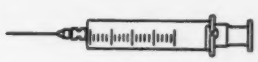
Paris, too, knows and uses Pentothal...

GEORGE SUYEOKA

reflecting... a pattern of clinical usage followed the world over

Pentothal Sodium has been in constant use for 23 years. In that time more than 2500 reports have been published on Pentothal, covering nearly every type of surgical procedure—*making Pentothal unmistakably the world's most widely studied intravenous anesthetic.* Reflected in these years of use and volumes of reports is a record unsurpassed for safety, effectiveness and versatility of use in intravenous anesthesia. Do you have the literature? Abbott

PENTOTHAL® Sodium



(Thiopental Sodium for Injection, Abbott)

706138

Expectant Motherhood. By Nicholson J. Eastman, M.D. Published by Little, Brown and Company, Boston. 198 pages. Price $1.75.

This has been a widely accepted little book for expectant parents for many years. It was first published in 1940. It is readable, complete without being complicated, and smoothly written to avoid controversy.

The present revision shows little change from the second. As might be expected, there are comments on "natural childbirth" and rooming-in. These are disposed of with the author's usual tact so that neither proponents nor opponents of either program can be offended. It is interesting that the previous edition had a dissertation on "hospital versus home delivery" whereas this edition confines the comments to the obvious advantages of the former.

This volume should rightfully continue its place as one of the most popular of the manuals for expectant parents.—*D.E.G.*

The Care of the Expectant Mother. By Josephine Barnes. Published by Philosophical Library, Inc., New York. 270 pages. Price $7.50.

At the risk of endangering the reestablished brotherly love with England, we must express our doubt that this import will enjoy wide circulation in this country. This opinion is not based on any objection to the subject matter or lack of appreciation of the author's efforts but the inability to find a segment of the obstetrical group in need of this type of presentation. The publishers present it as "a practical guide for all who undertake the management of pregnancy." It is comparable to a nurses' textbook in most of its presentations. Certainly it could serve a physician only as a cursory review manual and seems to offer no threats to those already in publication in this country.

It does offer some interesting information on the function of the National Health Service Acts in relation to the obstetrician. Thus, we find that a fee of $14.70 will be paid for the complete obstetrical service. No wonder they have revised their defense program if guided missiles come that cheap.—*D.E.G.*

ABSTRACTS FROM CURRENT LITERATURE

Heatstroke

Austin, Martin G., and Berry, John W.: Observations on 100 Cases of Heatstroke, J.A.M.A. 161:16, 1525-1529 (Aug. 18) 1956.

The diagnosis of heatstroke depends upon (1) an adequate exposure to high environmental temperatures, (2) hyperpyrexia, over 106 degrees F., (3) hot dry skin, and (4) central nervous system signs. In the heat victim the temperature is the evidence of the inability of the patient to dissipate heat. The absence of sweating seems to be the primary defect, the mechanism of which is not well understood. The authors have included patients with hot, dry skin who were acutely ill, although some of them did not have a body temperature as high as 106.

Of the 100 patients reported, 59 were males and 41 females. The ages varied from 26 to 88, with many over 60 years. Eighty-four per cent had some involvement of the cardiovascular system. Thirty per cent had excessive alcohol intake before the heat stroke. There were 17 deaths due to acute left ventricular failure in eight, anoxic nephroses in two, and deaths due primarily to the heat syndrome in seven.

Treatment requires provision of adequate tissue oxygenation by the treatment of shock, balance of electrolytes and fluids, prevention of bacterial complications, and treatment of an underlying disease process. Patients were given ice baths until the rectal temperature was 102 degree. Brisk massage and nasal oxygen were given during the baths. Those patients with systolic blood pressures below 100 mm. Mg. were given Levophed. Not over 3000 c.c. of fluid was given daily. Fluids were mostly five per cent glucose in saline. In a few patients in shock, cortisone was administered. All comatose patients received penicillin prophylactically.—*D.R.D.*

Submucosal Rectal Nodules

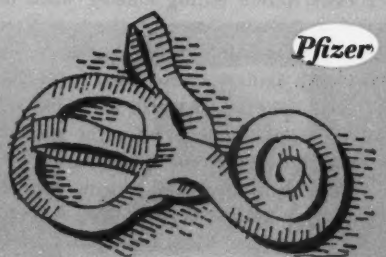
Swartzlander, Frank C.; Jackman, Raymond J., and Dockerty, Malcolm B.: Submucosal Rectal Nodules, Am. Jnl. Surg. (Nov.) 1956.

This is a presentation of a series of 91 cases of submucosal rectal nodules from Mayo Clinic over a seven-year period from 1945 to 1951. Also included is a short review of the literature.

The most commonly occurring nodule was hypertrophied lymphoid tissue in 28 cases. No evidence of generalized lymphoid disease was present in these cases. Follow-up studies revealed no evidence of this lesion being pre-malignant.

Oleomas were the second most common lesion in this series (20 cases). It is generally felt that these occur as the result of injection or instillation of some type of oil. These lesions also are not believed to be pre-malignant.

Carcinoids were found in 16 patients and were

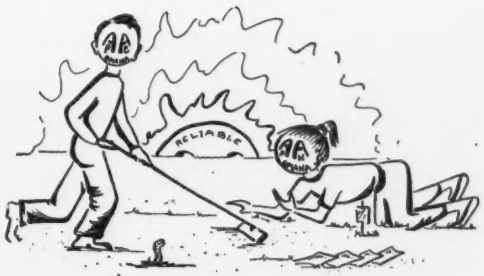


BONAMINE®

BRAND OF MECLIZINE HYDROCHLORIDE

prevents nausea, vomiting and vertigo associated with vestibular disturbances

*Trademark



Protection Against Loss of Income From Accident and Sickness as Well as Hospital Expense Benefits for You and All Your Eligible Dependents.

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL BENEFITS GO TO

PHYSICIANS CASUALTY & HEALTH ASSOCIATIONS
OMAHA 2, NEBRASKA
Since 1902

Outguessing your "Second Guessers" ...always a serious problem in OBESITY!

It's easy with DIOCURB!

This New Dosage form of dextro amphetamine sulfate is *not readily recognizable* by the most astute patient!

DIOCURB
(Tutag Brand dextro amphetamine sulfate)

SMALL, RED, SOFT GELATIN SPHERES, containing 5 mg. dextro amphetamine Sulfate.

Especially Effective... in Obesity!

Thin wall capsule releases amphetamine in as little as 90 seconds! Nonaqueous vehicle and micron particle size assures maximum therapeutic response.

TUTAG

Sample and literature on request.

S. J. TUTAG and CO.
19180 Mt. Elliott Avenue
Detroit 34, Michigan

considered malignant. It is believed these tumors arise from the chromaffin system of the intestinal mucosa. No reports are available that these tumors give the "carcinoid syndrome," which has recently been described with carcinoids of the small intestine. Also these tumors of the rectum do not reduce silver salts as do other carcinoids.

Inflammatory lesions were present in 11 cases. Pathologic examination of these lesions revealed acute or chronic inflammatory changes in the rectal mucosa.

Leiomyomas were present in five patients and all were benign.

Other lesions included in the series were one leiomyosarcoma, one adenocarcinoma, grade 1, one lipoma, two phleboliths, four indefinite cystic lesions, and two granulomas.

Submucosal nodules of the rectum are not uncommon and in this series most commonly occurred on the anterior rectal wall, between the dentate line and a point 9 cm. above the dentate line.

The size of the nodules may vary from 3 mm. to 4 cm., the average size being 1-2 cm.

Most of the submucosal rectal nodules of this series (80.3 per cent) were benign, but all should be biopsied. Benign nodules may be excised; if cystic, incision and drainage will suffice. It is felt that carcinoids may be locally excised with fulguration of the base if they are no larger than 1 cm. Larger growths should be treated more radically. Radical treatment is recommended for leiomyosarcoma.—*R.P.S.*

Breast Cancer and Pregnancy

White, Thomas Taylor, and White, William Crawford: Breast Cancer and Pregnancy, Ann. Surg. 144, 384-393 (Sept.) 1956.

The authors state that breast cancer and pregnancy coexist more frequently than is generally believed. About one of every 35 patients with breast cancer, or one of every three during the childbearing age, will have pregnancy as a complication.

The report is made on 49 cases followed for five years. A statistical analysis is made of the cases after being classified into various phases of pregnancy.

Of 11 patients treated primarily during pregnancy, two of four patients with disease limited to the breast survived 14 years. All cases with involved axillary nodes died within four years.

Of 14 patients with disease found during pregnancy and treated during nursing, one of three with disease localized to the breast survived 7½ years. All of the 11 with axillary spread were dead in five years.

Of 12 cases treated during nursing when disease had been found during nursing, three of five with disease limited to breast survived five years. Two of seven cases with axillary spread lived five years.

Of 12 cases operated upon for breast cancer who later became pregnant, seven of eight with disease limited to the breast survived five years.

The authors concluded that patients treated during pregnancy or nursing without spread of the disease beyond the breast, have a prognosis similar to an uncomplicated series. Also, it was felt that patients who became pregnant after operation have a good prognosis. Performing an abortion on patients with cancer of the breast appears to have no influence on the course of the disease.

General Practice Definition

A new definition of general practice, requested by three different committees of the American Medical Association, was formulated at the annual meeting of the American Academy of General Practice held in St. Louis last month. The definition reads as follows:

"General practice is that area of medical care performed by a doctor of medicine in those fields of diagnosis and therapy commensurate with his professional competence, assuming a total continuing responsibility for the health of the individual or the family as a unit."

Standards for membership in the organization were tightened by adoption of an amendment requiring a one-year rotating internship as an absolute minimum requirement.

Film, "Medicine and the Law"

The second film in the American Medical Association-American Bar Association series on "Medicine and the Law" will be available through the A.M.A. Film Library after July 1. It was shown for the first time on June 5 at the A.M.A. convention in New York.

The 30-minute black and white sound film deals with prevention of professional liability action. It presents four case reports of situations which caused legal action against physicians. It is a companion film to "The Medical Witness" in the series produced by the William S. Merrell Company in cooperation with the medical and legal organizations.

Medical societies are urged to arrange advance bookings for the films.

for "the butterfly stomach"

Pavatrine® with Phenobarbital

125 mg. 15 mg.

- *is an effective dual antispasmodic*
- *combining musculotropic and neurotropic action with mild central nervous system sedation.*

dosage: one tablet before each meal and at bedtime. SEARLE

OXYGEN THERAPY EQUIPMENT FOR THE OUT PATIENT

ALL THE NECESSARY EQUIPMENT — REGULATORS, HUMIDIFIERS, FLOWMETERS, CATHETERS, MASKS, CANNULAS — INCLUDING HIGH PURITY OXYGEN FOR THE TREATMENT OF THE OUT PATIENT.

RENTAL OR PURCHASE

REGULAR TRUCK DELIVERY SERVICE THROUGHOUT KANSAS

KANSAS OXYGEN, INCORPORATED

P. O. BOX 551 • HUTCHINSON, KANSAS • PHONE MOHAWK 5-5551

Diabetic Film Available

The film "Urine Sugar Analysis for Diabetics," developed in cooperation with the medical profession, is available at no charge to the medical and allied professions through Ames Company, Inc.

The film was made as a visual aid to be used in the education of diabetic patients and shows the relationship between carbohydrates and insulin. It also explains in lay language the meaning of various diabetic conditions. It has been produced on 16 mm. film in color and sound track with a running time of approximately 10 minutes. Appropriate "hand-out" literature accompanies the film.

Showings at diabetic clinics, diabetic lay societies, and other diabetic groups must be requested by the medical or allied professions to Ames Company, Inc., Elkhart, Indiana, or an Ames representative.

Having a baby is not only safer today for both mother and child than it was 25 years ago, but measured in equal dollars, it is also about 18 per cent less expensive, according to Health Information Foundation.

One-third of the people of the United States today are infected with live tubercle bacilli, according to the National Tuberculosis Association.

Medicine as a profession still has a strong appeal among young people. A recent report by the American Medical Association shows that 7,686 students, a record number, entered medical schools in the 1955-56 academic year. Of this number, 5,753, or 75 per cent, had had four years of college education.

Causes of Death in 1956

	All Ages	*Ages Under 40*	*Ages 40 thru 59*	*Ages 60 and Over*
Disease of Heart and Circulatory System	62.2%	16.2%	54.8%	66.7%
Cancer	17.6	17.7	22.4	16.2
Accidents	4.4	41.0	6.7	1.9
Influenza and Pneumonia	2.3	2.1	.9	2.7
Suicide	1.3	3.8	3.1	.7
Diseases of Kidneys	1.1	1.0	.9	1.1
Tuberculosis	.4	.5	.5	.4
All Other Causes	10.7	17.7	10.7	10.3
Total	100.0%	100.0%	100.0%	100.0%

—Annual Report, Mutual of New York

EVERY WOMAN
WHO SUFFERS
IN THE
MENOPAUSE
DESERVES
"PREMARIN"

widely used
natural, oral
estrogen

AYERST LABORATORIES
New York, N.Y. • Montreal, Canada
5646

Pfizer

longest acting
motion-sickness
preventive

BONAMINE*

BRAND OF MECLIZINE HYDROCHLORIDE

*Trademark

Deformity Appliances
of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets

Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

A new concept is emerging of the kinds of services and facilities that will be required for comprehensive care of the chronically ill, the disabled, and the aged. This concept recognizes the need for a wide variety of services and facilities, but the emphasis is on prevention and rehabilitation. The patient is viewed as a person in his home in his own community where he will receive the greatest part of his care under the supervision of his personal physician. The community remains the central factor in any plan for his care.—*Leonard A. Scheele, M.D., Public Health Reports, January, 1956.*

The United States Treasury Department notes that the automatic extension feature for maturing Series E bonds has resulted in 68 per cent retention beyond maturity date. Dollarwise, this figure amounts to a national total of $13 billion 987 million.

Graduate fellowships in industrial medicine offered by University of Cincinnati Institute of Industrial Health. Information available from secretary, College of Medicine, Eden and Bethesda Avenues, Cincinnati 19, Ohio.

Expectant mothers average nine consultations with their doctors before the birth of their babies, the Health Information Foundation reports.

PHYSICIANS AND PSYCHIATRISTS FOR CALIFORNIA

State hospitals, correctional facilities and veterans home. No written exam required.

Three salary groups:
$10,860 to $12,000;
$11,400 to $12,600;
$12,600 to $13,800;

Increases being considered effective July.
U. S. citizenship and possession of, or eligibility for California license required.

Write; Medical Recruitment Unit, Box A, State Personnel Board, 801 Capitol Ave. Sacramento, California

Prairie View Hospital

Newton, Kansas

Emphasizing a therapeutic milieu and psychotherapy. A non-profit psychiatric service of the Mennonite Central Committee.

today's health

AMERICA'S AUTHENTIC HEALTH MAGAZINE

SPECIAL HALF-PRICE RATES FOR PHYSICIANS, MEDICAL STUDENTS, INTERNS

a good buy in public relations

. . . place
today's health
in your reception room

Give your order to a member of your local Medical Auxiliary or mail it to the Chicago office.

TODAY'S HEALTH
PUBLISHED MONTHLY BY THE AMERICAN MEDICAL ASSOCIATION
535 NORTH DEARBORN • CHICAGO 10

Please enter ☐, or renew ☐, my subscription for the period checked below:

NAME_____
STREET_____
CITY_____ ZONE____ STATE_____
CREDIT WOMAN'S AUXILIARY OF _____ COUNTY

☐ 4 YEARS ... ~~$8.00~~ $4.00 ☐ 2 YEARS ... ~~$5.00~~ $2.50
☐ 3 YEARS ... ~~$6.50~~ $3.25 ☐ 1 YEAR .... ~~$3.00~~ $1.50

THE LATTIMORE-FINK LABORATORIES

Topeka — El Dorado
Kansas

J. L. Lattimore, A.B., M.D., Pathologist
A. A. Fink, A.B., M.D., Pathologist
Ralph S. McCants, A.B., M.D., Pathologist
H. C. Ebendorf, M.T., Serologist
A. C. Keith, B.S., Chemist
L. W. Hull, A.B., Bacteriologist
Walter Norris, A.B., Chemist

Anatomical and Clinical Pathology

Containers Furnished Upon Request

The Neurological Hospital

2625 West Paseo,
KANSAS CITY, MISSOURI

★ ★ ★

A voluntary hospital providing the care and treatment of nervous and mental patients and associate conditions.

★ **ORTHOPEDIC BRACES** ★
★ **SURGICAL APPLIANCES** ★

Manufacturing and fitting to the doctor's prescription is our specialty

Service to the patient at home, hospital, or our fitting rooms

★ PETRO'S SURGICAL AND ★ ORTHOPEDIC APPLIANCES

618-20 Quincy Topeka, Kans. Phone 40207

Service to Doctors of Medicine

General medical supplies

Surgical garment fitting department

Equipment repairs

Equipment rentals for patients

Munns Medical Supply Co.

Tenth & Horne **Telephone**
Topeka, Kans. **5-5383**

Malpractice Prophylaxis

"Never judge a book by its cover" . . . nor a malpractice policy by its size

Specialized Service makes our doctor safer

THE MEDICAL PROTECTIVE COMPANY
FORT WAYNE, INDIANA

Professional Protection Exclusively since 1899

TOPEKA Office:

R. E. McCurdy, Rep.,
P. O. Box 871

Telephone 2-3027

Everything for the Laboratory

SOUTHWEST SCIENTIFIC CORPORATION

LABORATORY SUPPLIES AND EQUIPMENT

122 South St. Francis Street
Phone 2-0582 Wichita, Kansas

SECLUSION MATERNITY

FAIRMOUNT SANITARIUM

For Unmarried Girls
Est. 1909

Private sanitarium with certified obstetrician in charge. Folder fully describing services FREE on request. Early entrance advised.
Rates reasonable. In certain cases work given to reduce expenses.

Write for information
GRACE SCHROER
4911 East 27th St.
Kansas City, Mo.
Phone: WA. 3-3577.

Index to Advertisers

Abbott Laboratories .....VIII, IX, XXIII, and 421
Ames Company, Inc. 401
Ayerst Laboratories .....XX, 427, and facing XX

Baker Laboratories, Inc. 419
Burroughs Wellcome and Company .393, 405, 412, and 413

California State Personnel Board 428
Central Aircraft Charter Service 417
Ciba Pharmaceutical Products, Inc. 395
Coca-Cola Company 426
Corn Products Sales Company XXII

Endo Products, Inc. XVII

Fairmount Sanitarium 430

Geigy Pharmaceuticals 399
General Electric X-ray Department 403

Hanicke, P. W., Manufacturing Company 427

Isle, W. E., Company 430

Kansas Oxygen, Inc. 425

Lakeside Laboratories V
Lattimore-Fink Laboratories 429
Lederle Laboratories .....
.XIII, XIV, XV, XVIII, XIX, 380, 381, and facing XII
Lilly, Eli, and Company XXVI

Medical Protective Company 429
Menninger Foundation 430
Merck, Sharp and Dohme .....XII, 410, and 411
Munns Medical Supply Company, Inc. 429

Neurological Hospital 429

Parke, Davis and Company .....
.....Inside front cover, III, VI, and VII
Petro's Surgical Appliances 429
Pfizer Laboratories .....423, 427, and inside back cover
Physicians Casualty Association 423
Prairie View Hospital 428

Riker Laboratories, Inc. .....XVI, XXI, and 409
Roerig, J. B., and Company 407

Saint Joseph's Hospital, Denver 397
Schering Corporation .....X, XI, and XXV
Searle, G. D., and Company .....391 and 425
Smith, Kline and French Laboratories .....Back cover
Southwest Scientific Corporation 430
Squibb, E. R., and Sons .....XXIV and 415

Tutag, S. J., and Company 423

Wallace Laboratories, Division of Carter Products, Inc. ....
.....Facing 396
Winthrop Laboratories .....Facing 404

Child Psychiatry Service

THE MENNINGER CLINIC

THE SOUTHARD SCHOOL

A residential school for elementary grade children with emotional and behavior problems.

THE CHILDREN'S CLINIC

Outpatient psychiatric and neurologic evaluation of infants and children to eighteen years.

J. COTTER HIRSCHBERG, M.D., Director—Topeka, Kansas; Telephone 3-6494

highly effective—clinically proved

Sigmamycin*

OLEANDOMYCIN TETRACYCLINE

provides added certainty in antibiotic therapy particularly for that 90% of the patient population treated in home or office...

Multi-spectrum synergistically strengthened SIGMAMYCIN **provides the antimicrobial spectrum of tetracycline extended and potentiated with oleandomycin to include even those strains of staphylococci and certain other pathogens resistant to other antibiotics.**

Supplied: SIGMAMYCIN CAPSULES—250 mg. (oleandomycin 83 mg., tetracycline 167 mg.), bottles of 16 and 100; 100 mg. (oleandomycin 33 mg., tetracycline 67 mg.), bottles of 25 and 100. SIGMAMYCIN FOR ORAL SUSPENSION—1.5 Gm., 125 mg. per 5 cc. teaspoonful (oleandomycin 42 mg., tetracycline 83 mg.), mint flavored, bottles of 2 oz.

*Trademark

Pfizer PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.
World leader in antibiotic development and production

a new dosage form

Compazine★ *Ampuls*

for immediate control of nausea and vomiting when oral administration is not feasible

In 98% of cases treated with 'Compazine' Ampuls during clinical trials, a single intramuscular dose completely stopped nausea and vomiting or reduced its severity enough to permit tablet administration.

Dosage: An initial dose of 5 to 10 mg. (1 to 2 cc.) should be injected *deeply* into the upper outer quadrant of the buttock. This may be repeated if necessary at intervals of 3 to 4 hours.

For further information, see S.K.F. literature.

Available: 2 cc. (10 mg.) ampuls in boxes of 6 and 100. 5 mg. tablets in bottles of 50 and 500.

'Compazine' the outstanding antiemetic with minimal side effects

Smith, Kline & French Laboratories, Philadelphia

★T.M. Reg. U.S. Pat. Off. for proclorperazine, S.K.F.

Stormont Medical Library,
State House,
Topeka, Kansas